UNIVERSITY OF NORTH TEXAS

BENCHMARKS

The University of North Texas Computing Center Newsletter

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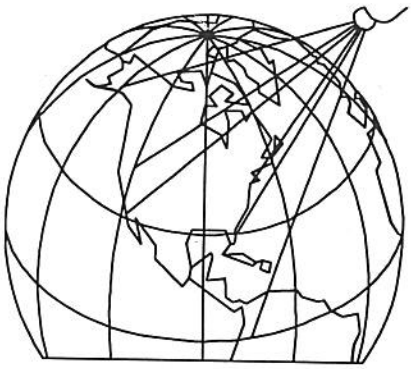
The Internet: An Electronic Global Village

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

This issue of *Benchmarks* focuses on the Internet, an international collaboration of cooperating, interconnected, multiprotocol networks, that has become an integral part of the professional and personal lives of countless people throughout the world. In fact, the Soviet computer network RELCOM, which is accessible via the Internet through a link in Finland, played an important role in the August Soviet coup resistance.[1] RELCOM was used as a communication vehicle during the coup attempt. Transcripts of Boris Yeltsin's speeches were sent over the network and links to the West were maintained throughout the coup attempt.

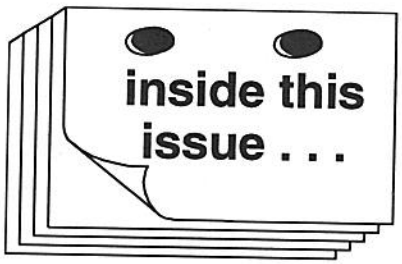


Billy Barron's article, "BBSing Around the Internet" (page 4), contains another example of the importance of the Internet, this time at the individual level. A person who had been an active participant on the Quartz BBS (an Internet BBS) became suicidal and sought help over the BBS. It is quite possible that if this person had not had access to immediate feedback via the BBS on the Internet he or she may have actually committed suicide.

The use of computers and communication via networks is a topic of increasing global interest. The Internet Society (see page 3) has been formed to encourage "the voluntary interconnection of computer networks into a global research and development communications and information infrastructure." The efforts of this organization coupled with the establishment of the National Research and Education Network (NREN) here in the U.S. (see page 11) will no doubt shrink the world even more. Perhaps the next time you decide to do a little networking (social *and* computer — see page 4 to get started), you'll find yourself "chatting" with someone from Moscow who is on GlasNet, the first non-profit, non-governmental network in the Soviet Union.[2] You might then be joined by several participants from Japan and Pakistan, and end up exchanging bread recipes. Now **that's** a global village.

[1] *Matrix News*, Volume 1, No. 6, page 9.

[2] For further information contact David Caulkins, GlasNet USA (dcaulkins@irc.org) voice: 415-948-5753 FAX: 415-948-1474.



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SERVICES AVAILABLE TO USERS OF THE UNT COMPUTING FACILITIES

The UNT Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone Numbers:

Computing Center:	(817) 565-2324
ISB 110 Lab:	(817) 565-3048
Network/Micro Services:	(817) 565-2316, (817) 565-2319
ISB I/O Area:	(817) 565-3890
BA I/O Area:	(817) 565-2350

All personnel listed below can be contacted either by calling the Computing Center or by sending them electronic mail on VM/CMS (USER-IDs follow each name. All IDs are on BITNET node UNTVM1).

Benchmarks - Claudia Lynch (AS04)

Information & ID-Codes; Disk Space Problems, Passwords - Pam Summers

Statistical/Research Support - George Morrow (AS01), Panu Sittiwong (PANU), Phanit Laosirirat (AC44), James Yarbrough (AC35)

Academic ADABAS/COM-PLETE - Cathy Hardy (AC55)

CRSP & COMPUSTAT Problems - Panu Sittiwong (PANU), Phanit Laosirirat (AC44)

Student Programming Problems - CSCI Dept.: GAB Room 550; BCIS Dept.: BA Room 152

Problems with JCL, Operating Systems - ISB 110 Lab

Communication/Terminal Problems - Network/Micro Svs.

Data Entry; Test Scoring & Analysis - Betty Grise

Administrative Applications - Coy Hoggard

Printout Retrieval - ISB or BA I/O Operators

General Access Computer Labs - ISB 110, Chilton Hall 255, GAB 330 & 550, Business 330 & 332, Matthews 309, ISB 205A, Willis Library 134, Wooten Hall 120

DIALING-UP UNT COMPUTERS OVER THE TELEPHONE

Phone numbers for accessing UNT computing systems:

300-2400 BAUD: (817) 565-3300
300/1200 BAUD: (817) 565-3499
300-9600 BAUD: (817) 565-3461
300-2400 BAUD: D/FW METRO 792-4140
Area code 214 must dial 817 before the METRO #.

Set Data Bits to **7**, Parity to **S**, and Stop Bits to **1**. The autobaud feature requires you to hit the <RETURN> key repeatedly after the connection is made so that the receiving modem can determine the baud rate. When you see the prompt (# for non-metro numbers, **UNTModems>** for the metro lines) you can enter one of the following commands to connect with the system of your choice.

Metro Lines UNTModems>	Non-Metro Lines #	System
N/A	**CALL 8040**	**MUSIC/SP** (line editing and PCWS)
Connect VM3270	**CALL 3270**	**Academic Mainframe Full Screen** (MUSIC, CMS Academic COM-PLETE)
Connect DEC	**CALL DEC**	**VAXcluster** (VMS)
Connect Sol	**CALL 900**	**Solbourne** (UNIX)
Connect Ponder	**CALL 780**	**Sequent** (Ponder)
Connect Library	**CALL 3000**	**UNT Libraries' on-line card catalog.**

To exit from the local phone lines, press <ESCAPE><RETURN>, and type **DONE** (at the # prompt), then press <RETURN> <RETURN>. To exit from the metro lines, press <CTRL><SHIFT><6>, then type **DISCONNECT** (at the UNTModems> prompt), then press <RETURN>.

HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : Fall 1991*

Day of Week	*Willis Library Lab*	*ACS Lab*	*General Access Labs:* *See above left for locations.*
Monday - Thursday	Open 24 hours a day	7:30 a.m. to Midnight	8 a.m. to 10 p.m.
Friday	Open 24 hours	7:30 a.m. to 9 p.m.	8 a.m. to 5 p.m.
Saturday	Open 24 hours	9 a.m. to 9 p.m.	10 a.m. to 5 p.m.
Sunday	Open 24 hours	1 p.m. to Midnight	1 p.m. to 10 p.m.

Hours may vary. Check MUSIC/SP, VM, CMS, VAX or Solbourne NEWS and/or posted schedules for exceptions

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The Internet Society

By Vinton G. Cerf

Reprinted from ***EDUCOM Review****, Fall/Winter 1991, Volume 26, No. 3/4. Editor: Wendy Rickard Bollentin, EDITOR@EDUCOM or EDITOR@EDUCOM.EDU This article was retrieved from the articles database of* ***CCNEWS****, the Electronic Forum for Campus Computing Newsletter Editors, a BITNET-based service of EDUCOM.*

It is clear that computer networking has become the subject of intense interest, not only among academics and researchers but also in business, government, and education as well as at all levels of national and international social structure. The considerable investment of effort, for instance, to stimulate network interest (in Europe through the ESPRIT and RACE programs, in the United States through the U.S. High Performance Computing and Communication program, and in Japan and Nordic countries through similar programs) underscores growing global interest in the use of computers and communication to enhance the effectiveness of a variety of business, social, and economic endeavors.

The Internet Society

The Internet is a collection of cooperating, interconnected, multiprotocol networks that supports international collaboration among thousands of organizations. Because of its current global scope, rapid rate of growth, and substantial interactions with other networking communities, the Internet has become an important focus for nternational networking. In an effort to manage this growth and meet the needs of its constituents, the Internet Society is being formed.

As a means of fostering the voluntary interconnection of computer networks into a global research and development communications and information infrastructure, the Internet Society is expected to be fully functioning by the end of this year. It will not operate the Internet; that will continue to be a collaborative activity that the society will seek to facilitate. The society will provide assistance to and support for groups and organizations involved in the use, operation, and evolution of the Internet and its protocols. It will also provide support for forums in which technical and operational questions can be discussed and will offer mechanisms through which interested parties can become informed and educated about the Internet and its function, use, and operation in addition to the interests of its constituents.

Membership

As a membership organization with voting individual members (regular and student) and nonvoting institutional members, the Internet Society will consist of several classes of institutional members (provisions have been made to accommodate nonprofits and start-ups).

At the June 1991 INET meeting in Copenhagen, it was announced that the Internet Society would adopt INET as its annual meeting vehicle. Therefore, the first annual meeting of the Internet Society will coincide with INET'92, scheduled for June 15-19, 1992, in Kobe, Japan. A variety of topics will be discussed, focusing on current applications, research and developments in networking, Internet functionality and growth, provision of network facilities in developing countries, policies for the development and use of network infrastructure, and other interests shared by the society's constituency.

Support for Internet Technical Evolution

The Internet Activities Board (IAB) has been concerned with the development and evolution of architectures supporting the use of multiple protocols in a networked environment. The society will incorporate the IAB and its functions into its operation and will work with other interested organizations to support and assist efforts that will evolve the multiprotocol Internet. The Internet Engineering and Research Task Forces will be used to stimulate networking research and to facilitate evolution of the TCP/IP protocol suite and integration of new protocol suites (e.g., OSI) into Internet architecture. The society will also work actively with parties and organizations interested in fostering improvement in the utility of the Internet for its constituent users.

Information and Infrastructure Services

The regular publication of a newsletter, with information about the international activities of Internet constituents, and a professional journal of contributions on a wide range of subjects is being planned. In addition, the society will provide assistance to and support for organizations responsible for maintaining the databases crucial to Internet function (e.g., the Domain Name System and X.500 Directory Services) and for organizations concerned with the security of the Internet (e.g., the Software Engineering Institute Computer Emergency Response Team [CERT] and its CERT-System). The society will also assist in the development of educational, advisory, and informative materials of use to society members. When appropriate, the society will organize or support activities that aid in coordination among organizations that operate components of the Internet.

The society will refer members to appropriate parties involved in operating

the various parts of the Internet, who may be helpful with specific questions. When possible, the society would seek to provide access to its information on-line but would also offer hard-copy and, perhaps eventually, CD-ROM-based information resources.

Individuals and organizations interested in joining the Internet Society should contact the Internet Society at 1895 Preston White Drive, Suite 100, Reston, VA 22091; 703 620-8990; FAX: 703-620- 0913; E-mail: ISOC@NRI. RESTON.VA.US. ■

Internet Society Charter

The Internet Society will be a nonprofit organization and will be operated for academic, educational, charitable, and scientific purposes, among which are:

A. To facilitate and support the technical evolution of the Internet as a research and education infrastructure and to stimulate involvement of the academic, scientific, and engineering communities, among others, in the evolution of the Internet.

B. To educate the academic and scientific communities and the public concerning the technology, use, and application of the Internet.

C. To promote scientific and educational applications of Internet technology for the benefit of educational institutions at all grade levels, industry, and the public at large.

D. To provide a forum for exploration of new Internet applications and to foster collaboration among organizations in their operation and use of the Internet. ■

BBSing Around the Internet

By Billy Barron, VAX/UNIX System Manager (Internet: billy@unt.edu)

BBSs quietly exist on the Internet. By quietly, I mean that many, if not most, network users are not even aware of their existence. One of the major reasons is that until fairly recently their locations were poorly documented. Also, many users are not aware of the differences between these systems and other Computer Mediated Communication (CMC).

The BBSs of the Internet are different from their Fidonet cousins in two aspects. The first aspect is that most of the users connect into these BBSs via a WAN instead of modems. Since most network users are not charged by the minute like long distance modem users, these BBSs tend to attract people from a much wider range of locations around the world. The other difference is most Fidonet nodes only support a single connection and most of the Internet BBSs are multiuser systems. Therefore, the busy signal problem is not as prevalent.

Please see BBSing on page 7.

The Network Connection

By Dr. Philip Baczewski, Acting Director of Academic Computing
BITNET INFOREP (BITNET: AC12@UNTVM1)

This column is a continuing feature of ***Benchmarks*** *intended to present news and information on various aspects of wide area networks.*

Getting Started on the Internet

There is such a thing as too much information. You might say that the Internet illustrates this idea perfectly, once you go beyond utilizing just electronic mail. The network is so vast, that you can sometimes be overwhelmed by the number of services to the point of not knowing where to start. In past issues of *Benchmarks* we have announced a number of Internet services. Perhaps here it is appropriate to step back a bit and talk about the Internet in more general terms in order to categorize the types of services available as well as the access methods to those services. Hopefully, this article will provide you with a starting point to organize your Internet activity and perhaps help you evaluate which services are most important to your research, instruction, or learning.

For the sake of this discussion, I'd like to think of Internet services as falling into one of three categories: those related to file transfer using FTP (File Transfer Protocol); those accessible via an interactive Telnet session; and services which utilize another protocol or a client/server model. FTP is a capability of almost all computers which have access to the Internet. The FTP command or program allows you to establish an interactive file transfer session with a remote computer system on the Internet. FTP usually allows you to see a directory of files on the remote system, change directories, get a file from the remote system, or in some cases, put a file from your local system to the remote system's directory. Telnet is another step of Internet activity. Telnet is the program or command which allows you to establis.

an interactive session with a remote system. In other words, it allows you to log in to a remote system as if it were a local host. A number of Internet services can be accessed by "Telnetting" to an Internet host. A number of other applications available for utilizing the Internet don't require you to establish an FTP or Telnet session. These programs will often retrieve and/or organize information, sometimes using a client/server model in which some processing of data occurs on both the local and remote hosts.

File Transfer Protocol

The first of our three categories is fairly limited conceptually but perhaps the most widespread in practice (other than E-mail). Many Internet hosts implement a service called "Anonymous FTP" which allows anyone on the Internet to establish a file transfer session by using the user name, "anonymous." In most cases the files available are publicly-distributed documents, shareware, or freely-distributed software. Once you know how to accomplish an FTP file transfer, a world of sources opens up.

Since there are so many sites available for anonymous FTP, finding a program or document can be a daunting experience. Fortunately, a new Internet service has been made available which makes this process a bit easier. At this point, our discussion is getting a bit out of order to discuss a service which actually falls into categories two and three, as mentioned above. Archie is an "archive server"; it is a database containing names of files and the sites on the Internet where they are available for anonymous FTP. You can Telnet to archie.sura.net, log in as archie, and follow the instructions to query the archie database. There are also utilities on the VAX and Solbourne which employ a client/server architecture to search the database without your having to establish a Telnet session. On either the VAX or Solbourne systems, you can receive a list of anonymous FTP sites for a particular topic by typing **archie** ***topic***, where ***topic*** is the name of a program or document.[1]

Telnet to the World

A number of universities are making various information services accessible via the Internet. The three most common types of services are on-line library card catalog systems, bulletin board systems (BBSs), and campus-wide information systems. The availability of card catalogs is a natural progression from the automation of card catalogs within libraries. As with other information systems, usefulness comes when your client population can access the system directly. As systems were included in campus networks, it was a short step to making them available on the Internet. There are now over 200 library card catalogs, some as far away as Australia, accessible from the Internet, and that number is growing at a rapid pace. A document entitled *Accessing On-line Bibliographic Databases in the North Texas Area* is available at the Computing Center offices (ISB 119) and in the General Access Labs across campus.[2]

An increasing number of bulletin board systems are being made available via the Internet (see related article in this issue on page 4). Many of these were developed by various universities' computing support departments, while a number of publicly available "Free-Net" systems are beginning to appear around the country. The Cleveland Free-Net system was the first of its kind and expansion of this concept is being promoted by an organization called the National Public Telecomputing Network. You may have heard of the Cleveland Free-Net in relation to Project Hermes, which makes available on-line the full text of recent Supreme Court decisions.[3] There are more Internet BBSs than can be mentioned here, but if you are interested in using some of them you can monitor the USENET discussion group, alt.bbs.internet.[4] A list of Internet BBS systems is posted there on a regular basis.

Campus-Wide Information Systems (CWIS) is another service available through a Telnet connection. Like the on-line catalog systems, these are usually created to serve a particular campus and are then made available to other interested parties via the Internet. CWISs usually use some type of menu-driven software to organize information relevant to a particular school. Items included might be the campus calendar, administrative procedures, or a university directory. If you are trying to find out such information about a university, their CWIS is probably a good place to look. Princeton, Cornell, and the University of North Carolina have been leaders in making their systems available on the Internet as well as providing support for CWISs elsewhere, either by making their CWIS software available or by offering their systems as a model for other developments. The BITNET mailing list CWIS-L (bit.listserv.cwis-l on USENET) has much discussion about the management of CWISs, and is also a good source to find out about various systems around the U.S. A comprehensive list of systems is periodically posted to that discussion list.

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[1] For more information on archie, see "Archie: A New Way to Get Information about Anonymous FTP Sites," in the October 1991 issue of **Benchmarks**.

[2] For more information on accessing card catalog systems see "The Network Connection" in the October 1991 issue of **Benchmarks**.

[3] For more information on Project Hermes, "U.S. Supreme Court Decisions Available On-Line," in the February 1991 issue of **Benchmarks**.

[4] Use ANUNews on the VAX or nn on the Solbourne to access USENET discussion groups.

Miscellany

A number of services are available, if not directly via the Internet, at least because of the Internet. In other words, you may or may not be establishing an Internet connection in order to utilize the service, but the service depends on an Internet connection at some point. One example is USENET news. Some USENET news reader programs maintain a database of USENET messages on the system where the news reader runs. Other programs are remote news readers; when you are reading news they actually use the network to transfer the text of messages that you wish to see. In either case, chances are that many of the posted messages were at some point transferred over the Internet long before you read them, even though USENET still remains in great use over UUCP networks. [5]

Another class of programs used to access Internet services are those which employ a client/server architecture, such as the archie program mentioned above. Another relatively new service is Wide Area Information Servers or WAIS, a software technology being made available by Thinking Machines Corporation. WAIS "client" programs (via the waissearch command) are installed on the VAX and Solbourne systems. They will allow you to enter search parameters and will then query WAIS server databases and, if any is found, return information on the topic you specified.[6] Such client/server applications do not require you to utilize the Telnet or FTP programs. Instead they require a specialized program to support their activities over the Internet. It is anticipated that the number of client/server applications running over the Internet will see dramatic growth over the next several years, especially as large-scale collections of on-line information becomes more prevalent and as the network grows to accommodate additional use.

In your use of the Internet, it is important to decide on your objective and then select your method of access. If you want to log in to another system on the Internet, use Telnet; if you want to transfer a file, use FTP; if you are looking for a file or program on the Internet, try archie; if you are wanting information on particular university, check to see if they run a CWIS or BBS; if you need on-line information on a topic, try WAIS. The quest for information becomes manageable once the tools involved are better understood. Ideally, one day all of this functionality will be at your fingertips within a standard interface. I'd like to be able to enter a command like "Connect me to a BBS where I can download the latest version of Kermit" and without too much delay, then find myself with a connection to the appropriate computing system. In fact, the reality of that type command actually working may not be too far off. In the meantime, there's a lot of information out there; we just need to work a little harder to find it. ■

List of the Month

Each month we will highlight one BITNET, Internet, or USENET Special Interest Group (SIG) mailing list. This month's list...

INFO-NETS@THINK.COM (Internet)

INFONETS@BITNIC (BITNET)

INFO.NETS (USENET: VAX ANUNews or Solbourne nn)

Coordinator: Robert L. Krawitz (rlk@THINK.COM)

Mailing list for general discussion of networks, focusing on inter-network connectivity. Questions about connections to particular sites are very common, as are discussions of new networks in the U.S. and abroad.

New archives are maintained on THINK.COM, and can be accessed via anonymous ftp as mail/info-nets.archives. Archives cannot be mailed, but they are available on BITNIC for Bitnet users. Old archives are not currently available, but if demand warrants, it may be possible to retrieve them.

If you are interested in subscribing to this mailing list, send the following command, either via an interactive message or as the first line of a mail message, to ***LISTSERV@BITNIC:*** **SUBSCRIBE INFONETS** ***your name*** *where* ***your name*** *is your first and last name. If you have a VAX or Solbourne User-ID, you can read the USENET discussion list INFO.NETS using either ANUNews on the VAX or nn on the Solbourne.* ■

5 UUCP stands for UNIX to UNIX CoPy and is a method of UNIX system networking which uses dial-up connections to transfer information.

6 For more information on WAIS, see "WAIS Servers on the Internet" in the October 1991 issue of *Benchmarks*.

BBSing continued from page 4.

Many people ask, "why use these BBSs when other network services offer similiar functions?" USENET offers discussions, FTP offers file downloads, and electronic mail is everywhere. While it is true that these BBSs offer the same services, there are often distinct differences.

Many of the BBSs offer information that is unavailable elsewhere on the network. For example, the Cleveland Freenet offered the first well-known on-line database of Supreme Court decisions on the Internet (it is now also available on WAIS). Other systems include information on NASA programs (SpaceLink), Weather (Cleveland Freenet), Investments (Heartland Freenet), and Gardening (Samba UNC).

BBS systems are usually managed by one person, the sysop. The sysop ultimately approves or disapproves of every decision made about the BBS. On the other hand, USENET is a democracy (or maybe anarchy is more accurate). Like BBSs, mailing lists are typically managed by one person. However, the subscription process is often difficult and in many cases requires human intervention on the moderator's part.

Another interesting phenomenon on these BBS systems is that while users from around the world can access them, you normally find a core group of users who are well-known on the board and tend to be involved in almost every discussion. USENET is usually the opposite, where very few people are well-known by everyone due to the message load and no one person can be involved in all the discussions. One of the effects is that BBSs tend to be more personal and present a narrower range of ideas. From past experience as both a BBS sysop and user, I've found that most of the time this leads to either an extremely high or extremely low signal to noise ratio depending on the users of the system. In the worst cases, the noise generators run off people who are trying to get real content across. Fortunately, it appears that most BBS users who access them over the wide area networks realize that using a BBS is a privilege and not a right.

BBSs almost always deliver messages immediately. USENET, mailing lists, and SMTP sometimes have immediate delivery and at other times experience delays of several days. Novice users find this asynchronous delivery to be disturbing and are more at home on a BBS. Also, on occasion the instantaneous message delivery can be important. One of the more interesting instances involved the Quartz BBS about two years ago. One of the users became suicidal and reached out over the BBS and received immediate help from friends on the system. Mailing Lists and USENET would have propagated the message too slowly and are possibly too impersonal.

Very few newsgroups or mailing lists offer easy to use anonymous postings. While at times anonymous posts can cause problems like people trying to pretend they are someone else, it also allows people to speak out on controversial topics to which they would not attach their name to. Many BBSs allow users to post anonymously or to use a handle for just this reason. However, it should be noted that often the sysop can still tell who posted the message. Most sysops can be trusted with this information, though.

Within a BBS system, it is usually simple to start a new discussion group. Mailing lists are much more difficult to create and maintain. USENET requires going through a voting process. One of the problems with the voting procedure is that some topics might be voted down for some reason because the majority does not want it though, a minority does. The Internet BBSs provide an alternative forum. In a BBS environment, if the sysop agrees, the discussion topic can be created. In some cases, though, the sysop may turn down a creation request. It is usually possible to find another BBS on the net that will create it.

In addition, it is not possible to set up private discussion groups on USENET with most software (ANU News is an exception). Many of the BBSs support this feature and put it to frequent use.

In some cases, a BBS system, such as the Freenets, support both network and dial-up users. A BBS like this provides a nice medium for the network and the dialup communities to intercommunicate. Also, in some locations, these BBSs provide Internet access points for many users.

Each of the features described above tends to vary from BBS to BBS. This variance leads to each BBS having its own character. They end up ranging from the serious to the silly, from the personal to the impersonal, and from the orderly to the chaotic. It is these differences that make the BBSs really useful as alternative discussion forums.

The most up-to-date and well maintained Wide Area Network BBS list is "Zamfield's Wonderfully Incomplete, Complete Internet BBS List." The HYTELNET package also contains information on BBSs.

While at first it may seem that a BBS on the OuterNet duplicates functions that already exist elsewhere on the network, the experienced user finds subtle differences that lead to the BBS being a valuable resource in its own right.

Reference

"Zamfield's Wonderfully Incomplete, Complete Internet BBS List" by Thomas A. Kreeger

This BBS listing covers all of the known BBS systems on the Internet. It is posted regularly on the newsgroup ALT.BBS.INTERNET, and is available for anonymous FTP on WUARCHIVE.WUSTL.EDU in the pub directory, and finally can be requested by E-mail to zamfield@dune.ee.msstate.edu. ■

The Weather Underground Keeps You Informed

The University of Michigan College of Engineering and Atmospheric, Oceanic, & Space Sciences offers a comprehensive weather bulletin board that is accessible via telnet on the Internet.

To access the Weather Underground from a UNT host computer (VAX, Solbourne, VM/CMS), type:

telnet hermes.merit.edu or **telnet 35.1.48.150**

1) Forecast for a U.S. city.
2) National Weather Summary.
3) Current Weather Observations.
4) Ski-range forecasts.
5) Longtest earthquake report.
6) Severe weather.
7) Hurricane advisories.
8) Canadian forecasts. ■

Special Internet Connections

This is an edited version of a list compiled by Scott Yanoff (Internet: yanoff@csd4.csd.uwm.edu)

- **Archie** — Offers: Internet anonymous FTP database. (Login: **archie**) To access from a UNT host computer, type: **telnet archie.mcgill.ca** or **telnet 132.206.2.3**
- **CARL** — Offers: On-line database, book reviews, magazine FAX delivery service. To access from a UNT host computer, type: **telnet pac.carl.org** or **telnet 192.54.81.128**
- Dante Project — Offers: Divine Comedy and reviews. (Login: **connect dante**) To access from a UNT host computer, type: **telnet library.dartmouth.edu** or **telnet 129.170.16.11**
- **Geographic Name Server** — Offers: Info. by city or area code (Population, Lat./Long., Elevation, etc.) To access from a UNT host computer, type: **telnet martini.eecs.umich.edu 3000** or **telnet 141.212.100.9**
- **Gopher** — Offers: UPI News, weather forecasts, internet games, library (Login:**gopher**) To access from a UNT host computer, type: **telnet consultant.micro.umn.edu** or **telnet 128.101.95.23**
- **Ham Radio Callbook** — Offers: National ham radio call-sign callbook. To access from a UNT host computer, type: **telnet marvin.cs.buffalo.edu 2000** or **telnet 128.205.32.4**
- **IRC Telnet Client** — Offers: Internet Relay Chat access, like a CB on the computer. To access from a UNT host computer, type: **telnet bradenville.andrew.cmu.edu** or **telnet 128.2.54.2**
- **Library of Congress** — Offers: COPY of Library of Congress (Assumes terminal is emulating a VT100). To access from a UNT host computer, type: **telnet dra.com or telnet 192.65.218.43**
- **List of Lists** — Offers: List of interest groups/E-mail lists in /net-info/interest-groups. To access from a UNT host computer, type: **ftp ftp.nisc.sri.com** or **ftp 192.33.33.22**
- **Lyric Server** — Offers: Lyrics in text file format for anonymous ftp downloading. To access from a UNT host computer, type: **ftp vacs.uwp.edu**
- **NASA SpaceLink** — Offers: Latest NASA news, including shuttle launches and satellite updates. To access from a UNT host computer, type: **telnet spacelink.msfc.nasa.gov** or **telnet 128.158.13.250**
- **NED** — Offers: NASA Extragalactic Database. (Login: ned) To access from a UNT host computer, type: **telnet ipac.caltech.edu** or **telnet 131.215.139.35**
- **Oracle** — Offers: The Usenet Oracle! Mail with subject as "help" for more info. To access from a UNT host computer, type: **mail oracle @iuvax.cs.indiana.edu**
- **PENpages** — Offers: Agricultural info (livestock reports, etc.) (Login: **PNOTPA**) To access from a UNT host computer, type: **telnet psupen.psu.edu** or **telnet 128.118.36.5**
- SDDAS — Offers: SW Research Data Display & Analysis Center. To access from a UNT host computer, type: **telnet 129.162.150.99** or **telnet espsun.space.swri.edu 540** ■

USENET: An Overview

By Eric Lipscomb, ACS General Access Lab Manager (Internet: lips@unt.acs.edu)

This is an edited version of an article that appeared in the February 1991 issue of ***Benchmarks*** *(pp. 3-8). Many UNT computer users are familiar with USENET, although they may not realize it. USENET newsgroups are accessible on the VAXcluster via ANU News and the Solbourne via the* ***nn*** *command.*

The question "What is USENET?" is analogous to a query posed by Lucretius nearly 20 centuries ago: "What is the nature of the universe?" For indeed USENET is as vast and varied as the universe, and though we cannot grasp it in its entirety, we can identify and describe enough of it to fool ourselves into thinking that we understand it. But this minute understanding is sufficient for us to use USENET to our advantage. Whether we look for information or entertainment, USENET guarantees to both satisfy and boggle our minds. The remainder of this article attempts to provide the reader with enough background on USENET that he or she may attain a sufficient understanding to venture safely into this "mystical" realm.

USENET, in its basest sense, is a network of computer systems that exchange information among themselves. Unlike other networks, such as BITNET, MILNET, SPAN, or EUnet, to name a few, USENET provides much more than simple communication between computer sites. Instead, most people recognize USENET as its Newsgroups. These newsgroups provide several megabytes of widely varied information in the form of messages or articles to all systems connected to USENET daily. Users contribute messages to USENET of great or trivial importance, of serious or humorous intent, and of overbearing or minute size. Other users have access to these articles and may peruse them at their convenience, all without any "official" supervision. But to begin to really understand USENET, we should start at its origin.

The Origins of USENET

USENET began as a UNIX communications project at Duke University in the spring of 1980. Students at Duke and the University of North Carolina wrote software that would exchange specialized messages between their schools' UNIX systems. Shortly thereafter, this software was shared with Usenix (a UNIX users' group), and within a year of the first testing, fifty universities were exchanging messages. Because of the nature of the system and its origins, the early topics of discussion were mostly computer-related emphasizing UNIX topics.

The UNIX operating system began to catch on in the early 1980s, and more and more schools and businesses began to establish UNIX sites on other existing networks. As more sites came on-line, these sites began to learn about and use this communication software. By 1983, the number of sites supporting the software grew from 50 to 500, with an average of five to ten new sites connecting each month. Employees at Bell Labs became interested in the communication activity and took over writing the communications software, which had become known as the "news" software. Both the user interface (the News reader) and the transport package (the News sender) became standardized and more robust, and the popularity of Usenix News grew. The term USENET soon came into existence to identify the Usenix Network that was spreading across the continent at a rapid pace.

Today, USENET spans the entire world, though its highest concentration is in the United States. There are approximately 16,000 sites providing access for over 580,000 users at present. The News software has undergone major revisions, communications between systems have improved greatly, and the number of Newsgroups has grown from around 100 in 1983 to over 1,000 in 1991. Needless to say, the topics of discussion have changed from mostly computer or UNIX discussions to conversations concerning any topic under (and about) the sun. The pro-cesses governing USENET have bec-ome standardized[1] so that News can be taken to platforms other than UNIX, which is helping to increase both the size and popularity of USENET. Though large and seemingly unstable, USENET grows and will continue to grow in the coming years.

News Delivery

News is still carried today as it was in the beginning: via phone modem. The early versions of the News software allowed systems to make contacts with other sites by dialing their numbers directly. The site placing the call absorbed the cost of the transfer, either incoming, outgoing, or both. Even though the amount of traffic was significantly smaller then, 300 and 1200 baud modems were the only ones available, and the transfers could be very expensive.

Even today, the bulk of mail transfers in the Net takes place over 1200 baud connections. But USENET has taken advantage of communications technology along the way. A bulk of the communication path now takes place via other networks, such as the Internet

[1] The carrier of these definitions is the Request for Comment [RFC] document. These documents are a basis of standardization used by the Internet that USENET has adopted in its quest to become more like the Internet. Several RFCs were used to obtain information contained in this article. For a good explanation of RFCs, consult Ed Krol's "Hitchhikers Guide to the Internet," included in the list of references.

and BITNET. By using these other communications methods, USENET News has become available to a wider audience. Now News can be read on VMS, MVS, MS-DOS, and other operating system platforms. This extended communication relies on the standards set forth in the RFC documents concerning USENET.

The early versions of the software made exclusive use of the UUCP (UNIX-UNIX CoPy) transfer protocol that was part of the UNIX system software. This method is still used between UNIX sites, but other machines can use different ways to talk to USENET carriers. Some machines have special mail carriers that handle the USENET messages, since each message can be seen as a specialized mail message. Many USENET interfaces have been written for different OS platforms to be compatible with UUCP, to make the transition between systems smoother. For instance, a VMS machine might contact a News feeder using UUCP to get its batch of mail, then transfer that News to other non-UNIX sites using Internet or BITNET mail, a faster, more efficient transfer for those machines.

Not all sites receive a full newsgroup feed, however. It is up to the administrator of a site to decide which groups or group classes the site will pull. Feeds are arranged generally by the administrators of two sites. If a site A requests a feed from site B, site A is limited to the groups that site B is currently receiving. The administrator of A could also request site B to get feeds on groups that site A wants, or site A could get in contact with site C for additional news feeds. In any case, sites B and C are obligated not to feed site A any groups that it does not want, nor are they obligated to provide to A any groups that it does want. As with everything else in USENET, it boils down to a matter of convenience on the part of the administrator.

Newsgroup Structure

In the early days of USENET, when traffic was small, articles were shared among systems in no organized manner. All articles were transmitted as they were received, and following a discussion relied heavily on following the subjects. Soon, though, the traffic became great enough that this process was no longer useful. Articles were organized into Newsgroups with a topic, patterned after the Internet mailing list organization. But where Internet mailing lists were structured, Newsgroups were not, and, for the most part, are still not. There are a few accepted practices and general guidelines governing the organization of the newsgroups, but nothing is official. All "organization" is the product of Newsgroup evolution. Still, there are definite areas that can be described.

Newsgroup Names

Since Newsgroup articles range in topic from the relative safety of using city leaves for garden mulch to discussions of the latest movie release to political systems in various parts of the world to the original UNIX discussions, the Newsgroup name attempts to describe with clarity the topics of a particular Newsgroup. For instance, rec.arts.movies carries discussions about movies and movie-making, talk.politics.mideast carries discussions about Middle Eastern events, and comp.unix.questions has participants asking and answering general questions about UNIX.

But there is a method even to this madness. Newsgroups are organized in a fashion similar to the Internet domain structure.[2] For the Newsgroups distributed worldwide, there are seven general topic categories: "comp," "sci," "misc," "soc," "talk, "news," and "rec." Each of these categories is broken down into subcategories by topic. The "comp" category is described as "topics of interest to both computer professionals and hobbyists, including topics in computer science, software source, and information on hardware and software systems."[3] Discussions of operating systems would fall under the general category of comp.os, with specific OS types falling under that, as comp.os.minix, comp.os.vms, and comp.os.msdos. Each category can have a subcategory, and while this can go to extremes, it does help to clarify the topic. For instance, comp.os.msdos has three subcategories: comp.os.msdos.apps, comp.os.msdos.misc, and comp.os. msdos.programmer. Other categories follow the same pattern. The "rec" category is described as "groups oriented toward hobbies and recreational activities"[4] and has subgroups for discussions on musical topics in rec.music.beatles, rec.music.dementia, and rec.music.synth.

Other Categories

There are several categories in addition to the seven mentioned above that do not receive worldwide distribution, have geographical or regional interest only, or have "nontraditional" topics. These categories include "alt," "bionet," "biz," "clarinet," "gnu," "inet," "pubnet," "unix-pc," "u3b," and "vmsnet." Of these alternative categories, the alt group has the largest following. Some sites include the alt groups as part of the complete feed of newsgroups. Other sites refuse to carry the alt groups. The alt groups have little topic organization, though the group naming does follow that of the major categories.

[2] For a complete description of the Internet domain name structure, see the Computing Center handout "The Internet: an Introduction to the Use of the Internet at the University of North Texas." or "The Hitchhikers Guide to the Internet; RFC1118."

[3] Spafford, Gene. "List of Active Newsgroups." news.lists, no. <12402@ medusa.cs.purdue.edu>,USENET, November 8, 1990, p. 1.

[4] Ibid.

Whereas the major categories are somewhat predictable as to their topic content, the alt groups have just about anything. Here are a few samples:

alt.aquaria	The aquarium & related as a hobby.
alt.bbs	Computer BBS systems & software.
alt.dreams	What do they mean?
alt.models	Model building, design, etc.
alt.rap-gdead	Fans of The Grateful Dead and Rap. Really.
alt.rhode_island	Discussion of the great little state.
alt.sex	Postings of a prurient nature.
alt.sex.pictures	Lewd pictures consuming net mega-bandwidth.
alt.tv.twin-peaks	Discussion about the popular (and unusual) TV show.[5]

Groups in Moderation

Another classification that applies to all Newsgroup categories is Moderated status. A moderated Newsgroup has specific posting restrictions. Unlike an unmoderated group where any and everyone can post directly to the group, users must submit postings to the moderator of a moderated group. If the moderator approves the post, he or she will post it to the group. This can control the content of the Newsgroup to such a degree that the Newsgroup name indicates exactly what messages it contains.

In unmoderated groups, there is a tendency among users to stray off the topic or to get into large "flame wars" where users criticize each other or other items or people. These types of non-topic messages tend to scare off the user new to USENET, but eventually tempers will die down and discussions will return to "normal." Moderated groups, however, avoid this problem (if it is actually a problem) altogether. Very few off-topic or "flame" articles get sent to the moderator of a group "since the mere knowledge that a posting will be reviewed and judged usually freezes frivolous users in their tracks."[6]

Newsgroup Management

One of the joys and curses of USENET is the lack of management of the Newsgroups. At the same time, this state of organized anarchy provides a great deal of freedom and a healthy dose of chaos to the participants. This is one of the things that makes USENET so popular.

What little control there is over USENET exists in the form of the RFCs. These documents detail specific standards that must be followed for the machine to work. But the RFCs only dictate over the format of the articles, the protocols used to deliver News, and the creation and removal of groups. Even in the case of the latter, these standards are really only guidelines that can be followed if full cooperation is needed.

Moderated Newsgroups (again)

One such form of management is the concept of the moderated newsgroup. A repeat of the format of these Newsgroups is not necessary, but it is essential to point out that all sites getting feeds on a moderated group must agree to follow the rules of moderation. When the administrator sets up the feed for the moderated group, he or she must make sure to disable a user's ability to post directly to the group. Instead, an option to send an article directly to the moderator instead of the group could be put in place. If a site refuses to follow this restriction, the sites feeding it will be asked not to provide feeds for that particular group, and the site will be cut off from that group, if not from USENET altogether.

Creating a New Group

Looking at the list of newsgroups might lead one to believe that there is no policy on creating new groups, when, in actuality, that is not the case. The procedure for creating a new group is outlined in detail in Eliot Lear's "How to Create a New Newsgroup." The process is quite time-consuming and leaves many places for new group creation to fail.

The process begins with a "call for discussion" that is posted on news.announce.newgroups and to any other groups related to the proposed new group. During the discussion period a charter for the new group is created and moderators, if any, for the group are named. The discussion lasts for a 30 day period. If no general agreement is reached during that time, the discussion may be continued in private mail until such point that problems have been resolved, at which time another call for discussion is posted including the revised information. If an agreement is reached within the 30 day period, a call for votes is posted.

The "call for votes" is posted on news.announce.newgroups and any groups on which the call for discussion was posted. This should occur as soon after the end of the discussion period as possible. The call for votes must explicitly outline the voting procedure: where to send votes and the length of the voting period. It must not be more or less difficult to cast a particular vote over the other, and the voting period must last between 21 and 31 days. During the voting period, no discussion of the voting results may be posted. Additional calls for votes may be posted

[5] Spafford, Gene. "Alternative Newsgroup Hierarchies." news.lists, no. <12403@ medusa.cs.purdue.edu>,USENET, November 8, 1990, pp. 2-3.

6 Nemeth, Evi, Garth Snyder, and Scott *Seebass.* UNIX System Administration Handbook. Prentice Hall, Englewood Cliffs, New Jersey, 1989, p. 369.

including the IDs of those who have voted, but not how they voted. The charter for the new group may not change in any way during the voting period. Only votes mailed to the vote-taker are valid. No group votes, voting by proxy, or voting under multiple IDs are allowed.

After the voting period has ended, the vote-taker must post the results of the vote, including the IDs of all who voted and which vote they cast. This post is available for five days to make corrections in case of error. If the number of "yes" votes outnumbers the number of "no" votes by at least 100, and there is a two-thirds majority of "yes" votes, the new group is created. The vote-taker is then responsible for notifying the keeper of the master Newsgroup list of the new group and its pertinent information.

This process does not guarantee the creation of the new group, however. Currently, there is a discussion in news.admin concerning a call for discussion and votes to create a new group that was done according to the "rules," but one of the individuals responsible for verifying the process has remained silent on the issue, and the group has yet to be created. No matter what the outcome of this particular incident, there is almost a guarantee of a new policy concerning group creation being released to the net.

References

Emerson, Sandra L. "USENET: A bulletin board for UNIX users." *Byte* (October 1983), 219-236.

Frey, Donnalyn, and Rick Adams. *!%@:: A Directory of Electronic Mail.* O'Reilly & Associates, Sebastapol, California, 1990.

Horton, Mark R. "Standard for interchange of USENET messages; RFC850." In *ARPANET Working Group Requests for Comments*, no. 850. SRI International, Menlo Park, California, June 1983.

Horvitz, Robert. "The USENET Underground." *Whole Earth Review* (Winter 1989), 112-115.

Kelly, Kevin. Introduction to "The USENET Underground." *Whole Earth Review* (Winter 1989), 112.

Krol, Ed. "The Hitchhikers Guide to the Internet; RFC 1118." In *ARPANET Working Group Requests for Comments*, no. 1118. SRI International, Menlo Park, California, September 1989.

Lear, Eliot. "How to Create a New Newsgroup." *news.admin*, no. <12395@me-dusa.cs.purdue.edu>, USENET, November 8, 1990.

Nemeth, Evi, Garth Snyder, and Scott Seebass. *UNIX System Administration Handbook.* Prentice Hall, Englewood Cliffs, New Jersey, 1989.

Quarterman, John and Josiah Hoshins. "Notable Computer Networks." *Communications of the ACM 29*, 10 (October 1986), 932-971.

Spafford, Gene. "Alternative Newsgroup Hierarchies." *news.lists*, no. <12403@me-dusa.cs.purdue.edu>, USENET, November 8. 1990.

"How to Construct the Mailpaths File." news.admin, no. <12404@medusa. cs.purdue.edu>, USENET, November 8, 1990.

"List of Active Newsgroups." news.lists, no. <12402@medusa.cs.purdue.edu>, USENET, November 8, 1990.

"List of Moderators." news.lists, no. <12406@medusa.cs.purdue.edu>, USENET, November 8, 1990.

"The Internet: an Introduction to the Use of the Internet at the University of North Texas." Academic Computing Services, University of North Texas, Denton, Texas, August 1990.

"USENET." *Horticulture* (October 1988), 11-12. ■

Guidelines for Newsgroup Creation/ Deletion/Modification on the UNT USENET Hierarchy

By Billy Barron, VAX/UNIX System Manager (Internet: billy@unt.edu)

Group Creation:

These guidelines are modified versions of the policies of the "standard" USENET newsgroup hierarchy policies. They are only intended for the UNT hierarchy and do not apply to any other hierarchy.

Any group creation request which follows these guidelines to a successful result will be honored, and any request which fails to follow these procedures or to obtain a successful result from doing so will not be honored, except under extraordinary circumstances. The reason these are called guidelines and not absolute rules is that it is not possible to predict in advance what "extraordinary circumstances" are or how they might arise.

The Discussion

❶ A request for discussion on creation of a new newsgroup should be posted to unt.news.discussion, and also, if desired, to any other groups in the UNT hierarchy related to the proposed topic. However, if you post across multiple groups, the Followup-to: header must be set so that the actual discussion takes place only in unt.news.discussion.

❷ The name and charter of the proposed group and whether it will be moderated or unmoderated (and if the former, who the moderator(s) will be) should be determined during the discussion period. If there is no general agreement on these points among the proponents of a new group at the end of 7 days of discussion, the discussion should be taken off-line (into mail) and the

proponents should iron out the details among themselves. Once that is done, a new, more specific proposal may be made going back to step 1 above.

The Vote

❶ AFTER the discussion period, if it has been determined that a new group is really desired, a name and charter are agreed upon, and it has been determined whether the group will be moderated and if so who will moderate it, a call for votes may be posted to unt.news.discussion and any other groups that the original call for discussion was posted to. The call for votes will specify the following procedure:

All votes will be mailed to news-votes@unt.edu. The body of the vote will consist of one line with two fields per item voted on. The first is the name of the group being voted on. If the vote is a modification, then it is the new name of the group. The second, which is separated from the first by a space, is either the word YES or the word NO. Votes of multiple items can be cast in one message. Each vote goes on a separate line. Any ballots which contain multiple lines for the same item will be rejected.

❷ The voting period will last at least 7 days and no more than 14 days, no matter what the preliminary results of the vote are. The exact date that the voting period will end must be stated in the call for votes. Only votes that arrive before the end of the voting period will be counted.

❸ ONLY votes MAILED will be counted. Votes posted to the net for any reason (including inability to send mail) and proxy votes will not be counted. Also, votes from outside the UNT network will not be counted.

❹ Votes may not be transferred to other, similar proposals. A vote will count only for the EXACT proposal that it is a response to. In particular, a vote for or against a newsgroup under one name will NOT be counted as a vote for or against a newsgroup with a different name or charter, a different moderated/unmoderated status or a different moderator or set of moderators.

❺ A vote must be run only for a single group proposal. Attempts to create multiple groups must be handled by running multiple parallel votes rather than one vote.

National Research and Education Network to Replace the Internet

The "High-Performance Computing and National Research and Education Network Act of 1991" was passed unanimously by the U.S. Senate on September 12. This bill establishes the National Research and Education Network (NREN) which will eventually replace the Internet.[1] The text of the bill is available for anonymous FTP and remote mail query from the Merit Information Services machine: **nis.nsf.net** The directory name is NSFNET and the filename is **gorebill.1991-txt** If you would prefer to receive the bill via E- mail, send a message to: **nis-info@nis.nsf.net** or **nis-info@merit** There should be no subject defined in the mail message and the only line of text should read: **send gorebill.1991-txt**

[1] This information was taken from Matrix News, Volume 1, No 6. ■

The Result

❶ At the completion of the voting period, the votes will be counted. A tally of e-mail addresses and names (if available) of votes received will be posted to unt.news.discussion and any other groups to which the call for votes was posted. The tally will include who voted for and against the proposal so the vote can be verified.

❷ After the vote result is posted, there will be a 3 day waiting period, beginning when the voting results actually appear in unt.news.discussion during which the net will have a chance to correct any errors in the voter list or the voting procedure.

❸ AFTER the waiting period, and if there were no serious objections that might invalidate the vote, and if 15 more valid YES/create votes are received than NO/don't create AND at least 2/3 of the total number of valid votes received are in favor of the creation, a newgroup control message may be sent out. If the 15 vote margin or the 2/3 percentage is not met, the group will not be created.

❹ A proposal which has failed under step 3 above may not again be brought up for discussion until at least four months have passed from the close of the vote. This limitation does not apply to proposals which never went to vote.

Newsgroup Modification

The procedure for modification is identical to the group creation procedure. The two types of modifications are name change and change of moderator status. The groups unt.general, unt.test, and unt.news.discussion can not be modified.

Newsgroup Deletion

Newsgroups which are inactive (no messages) for 60 days will be deleted. The groups unt.general, unt.test, and unt.news.discussion can not be modified. ■

General Access Lab Holiday Hours

Location	Dates	Times
ISB 110 Lab	Nov. 27, Dec. 13	7:30 a.m. - 6 p.m.
	Nov. 28, Dec. 16, 21-25, Dec. 28, 29 Jan. 1, 4,5, 12	CLOSED
	Nov 29, Dec. 16-20, Jan. 6-10	8 a.m. - 5 p.m.
	Nov. 30	9 a.m. - 5 p.m.
	Dec. 14 Jan. 11	9 a.m. - 6 p.m.
	Dec 26,27,30,31 Jan. 2,3	1-5 p.m.
	Dec. 1-12, Jan. 13	Regular Hours
College of Business	Nov. 27, Dec. 13	8 a.m. - 4 p.m.
	Nov. 28, Dec. 14-Jan. 12	CLOSED
	Nov. 29-Dec. 12, Jan. 13	Regular Hours
Chilton Hall Labs	Nov. 27	8 a.m. - 3 p.m.
	Nov. 28-Dec. 1, Dec. 14-Jan. 12	CLOSED
	Dec. 2-13, Jan. 13	Regular Hours
Willis Library	Nov. 27	Close at 6 p.m.
	Nov. 29,30	8 a.m. - 5 p.m.
	Dec. 1	Open at 8 a.m.
	Dec. 2-20	OPEN 24 hours
	Dec. 21	Close at Midnight
	Dec. 22, Jan. 2-10	8 a.m. - Midnight
	Dec. 23	8 a.m.-4 p.m.
	Dec. 26, 27, Dec. 30,31	1-5 p.m.
	Nov. 28, Dec. 24, 25, 28, 29	CLOSED
	Jan. 11	Resume 24 hour Operations
GAB Labs	Hours not available at publication time. ■	

ACS Staff Activities

By Claudia Lynch, Benchmarks Editor
(BITNET: AS04@UNTVM1)

Academic Computing Services has hired an additional part-time employee to help meet the growing demands in documentation production. **Bahram Paini** is the new VM/CMS Documentation Assistant. A native of Iran, Bahram has been an employee of the Computing Center since 1986. He has worked as an I/O Consultant, CPU Operator, and Help Desk Consultant. He is a candidate for a Master of Science degree in Computer Sciences.

Billy Barron, the VAX/UNIX System Manager, had an article published in the September 1991 issue of *Matrix News* (Volume 1, NO. 6). The article, "Libraries on the Matrix," discusses library accessibility over the Internet and the availability of other documents, full- text on-line. *Matrix News* is the corporate newsletter of Matrix Information & Directory Services.

Philip Baczewski, Acting Director of Academic Computing, attended EDUCOM '91 in San Diego, CA October 16-19. The theme of this year's EDUCOM conference was "Curricula, Computing and Culture." **Richard Harris**, Associate Vice President for Computing and **Ray Vondran**, Chairman of the Information Resources Council and Dean of the School of Library and Information Sciences also attended. ■

Choosing an Electronic Mail System

By Billy Barron, VAX/UNIX System Manager (Internet: billy@unt.edu)

The purpose of this article is to help users on the UNT campus select the correct e-mail system for their needs. The way to select the correct E-mail system is to go through the Needs section and find the system that fits the need. If multiple systems fit the need, then use the Background section to determine which system is the most appropriate.

Need	Systems Meeting These Needs
BITNET mail	VAX or CMS
Internet mail	VAX, Solbourne (see note 1), CMS, Sequent (see note 2), or Pegasus mail on the file servers CSCI1, CC1, or SCS (see note 3)
THENET, SPAN, or HEPNET mail	VAX
Mail to other Wide Area Networks	VAX
On-campus Electronic Mail to the following file servers: CC1, SCS, LIS, LIBRARY, COE, COBAF, AAO, or CAS	Word Perfect Office Mail on any of these servers (see note 3)
On-campus Electronic Mail to the following file servers: AAO, ACS, CAS, CRSLA, CSCI1, LIBRARY, LIS, MHT, SCS, or TWLAB	Pegasus Mail on any of these servers (see notes 3 and 4)
You need to be able to access E-mail from home	VAX, Solbourne (see note 1), CMS, or Sequent (see note 2)
Background	**Systems Fitting That Background**
You have IBM Mainframe background	CMS
You have VAX background	VAX
You have Unix background	Solbourne (see note 1) or Sequent (see note 2)
You do not have an IBM Mainframe background, but CMS and VAX are both options	VAX

Notes:

❶ Solbourne accounts during the Fall 1991 semester are only available to faculty, staff, and graduate students.

❷ The Sequent is only available to persons in the Computer Sciences or Physics departments. Accounts are handled through the Computer Sciences office (GAB 320, 565-2767).

❸ Accounts on the file servers listed are only available to the user community for that file server. For example, the LIS server only allows users within the School of Library and Information Sciences. Accounts for all file servers are applied for with the network manager of that file server.

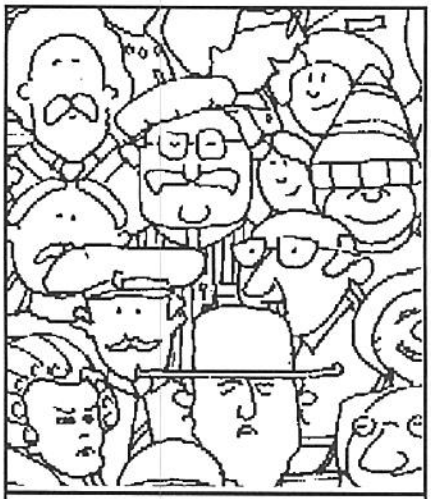
❹ To network managers, Pegasus mail is a public domain package that can be added to your file server at no cost. ■

HYTELNET Upgraded

This is an edited post by Peter Scott/Order Unit/U. of Saskatchewan Library (SCOTT@SKLIB.USASK.CA) to CWIS-L.

HYTELNET version 4.0, the utility which gives an IBM-PC user instant-access to all Internet-accessible library catalogs, Freenets, CWISs, Library BBSs, etc. is now available. You can get it via anonymous ftp from: vaxb.acs.unt.edu (129.120.1.4) in the "library" subdirectory. It is listed as HYTELN40.ZIP.

Version 4.0 is a major upgrade. It has been completely re-designed to run faster. The majority of files are now housed in their own subdirectories. For example, all Canadian library sites are now filed in the subdirectory \CN0, Australian libraries in \AT0, etc. The file OTH046 contains instructions for accessing the UNIX version of HYTELNET, which has been written by Earl Fogel at the University of Saskatchewan. ■



BENCHMARKS FORUM

BENCHMARKS FORUM is intended to serve as a vehicle for answering questions that may be of general interest to the user community. If you have a question, please send electronic mail to the ***Benchmarks*** *editor (AS04@UNTVM1) or write it down and drop it by the Computing Center. We will try to answer it in the next issue.*

Question: *When I do my CMS work at the COBA lab, it seems like my job output gets routed everywhere but where I want it to go. How do I get my output to go to the COBA laser printer?*

Answer: There are two ways to send output from CMS to the laser printer in the COBA lab. You can put the following line in your PROFILE EXEC, which is read each time you log on to or IPL your CMS machine, or you can type them in at the READY; prompt:

```
TAG DEV PRT ACADMVS REMOTE1
SPOOL E TO RSCS
```

This command associates the printer destination with output generated by your CMS virtual printer. If you wished to route your print to the laser printer in the ISB, you would replace REMOTE1 with REMOTE4. ■

Information Resources Council News

Minutes provided by Sue Harrison, Recording Secretary

Information Resources Council Members: *Philip Baczewski, Computing Center (ex-officio); Dave Barker, TCOM - Physiology; Cengiz Capan, College of Business; Carolyn Cunningham, Financial Aid; Stephen Farish, College of Music; Paul Fisher, Computer Sciences; Frank Forney, TCOM - Academic Computing; Chuck Fuller, Business Services; Don Grose, UNT Libraries; Richard Harris, Computing Center (ex-officio), Tom Newell, Telecommunications; Don Palermo, Admissions; Sue Pierce, School of Community Services; Paul Schlieve, Computer Education & Cognitive Systems; John Todd, Political Science; Ray Vondran, Library and Information Science (Chair); Sue Harrison, Computing Center (Recording Secretary).*

September 17, 1991 Meeting

The meeting schedule for the IRC which was distributed with the minutes was discussed; it was agreed that there would be no meeting in May, 1992, but the rest of the schedule was approved as follows:

- October 15, 1991
- December 10, 1991
- February 18, 1992
- April 21, 1992
- July 21, 1992
- November 19, 1991
- January 21, 1992
- March 24, 1992
- June 16, 1992

All IRC meetings will be held in the Administration Building Board Room, from 2:00-4:00 p.m. unless members are otherwise notified.

A review was made of a list of IRC committees which had been distributed with the minutes. After incorporating changes and clarifications, the Secretary will distribute a new list of IRC committees, their membership and charge.

Cengiz Capan distributed a General Access Lab Budget Worksheet and explained it to the Council, noting that he believes enough money has been allocated to adequately support the labs. Capan explained that the line item for the Microcomputer Maintenance Shop is to provide maintenance for the hardware in the labs; this allocation replaces the 13% surcharge previously charged by the Microcomputer Maintenance Shop. There being no objections to the budget as it was presented, it was approved by the Council.

Peter Witt, Chair of the Search Committee for Director of Academic Computing, presented a draft of the job description for that position and asked the IRC for input regarding the description or other issues relating to this position. He explained that there will be a national search conducted. Witt stated that the Search Committee would like the IRC to be heavily involved in the interview process; they hope to have the final 3 candidates available for interviews by Thanksgiving or Christmas, at the latest. Discussion followed.

The report from Paul Schlieve on the High Speed Communication Backbone Upgrade was deferred to the October meeting.

Sue Pierce reported that GALMAC is continuing to meet monthly to work on several items. She distributed a brochure, which is still in the process of revision, but which is currently being distributed in the General Access Labs and pointed out that as soon as the final revisions are made, a new brochure will be sent to all of the Lab Managers for them to copy and distribute to lab users.

Chairman Vondran announced that there are no funds available at this time for enhancement of the Voice Response System, and further, that funds will not be allocated out of the General Access Computer Service fees.

Vondran announced that tentative plans are being made for an IRC Retreat to be held on November 19, 1991, probably at the Sheraton Hotel, from 10:00 a.m. - 4:00 p.m., including lunch, for the purpose of beginning the Strategic Planning process. Henry Hayes has agreed to conduct the meeting.

Sue Pierce distributed the official University policy on Computing and Data Communications Resource Acquisitions and announced that her committee is still working on the Supported Computing Items List (SCIL). The committee plans to distribute a final SCIL prior to the next IRC meeting.

Discussion of additional representation on the IRC was deferred to the October meeting.

Chairman Vondran announced that Chuck Fuller and Steve Miller are scheduled to rotate off the IRC; therefore, he will contact their Vice Presidents and request that re-appointments or replacements be made. He will also request that Deans replace or re-appoint their current representatives.

Paul Schlieve reported that the Electronic Mail Task Force had requested a new position in the Computing Center specifically for Electronic Mail support. That position was not initially approved; however, it has now been included in the budget which will go before the Board of Regents. If the Board of Regents has no objection, the position will be approved for this fiscal year.

Jim Curry presented a draft of the Microcomputer Data Integrity Policy. This policy will be reviewed by members and brought before the Council for approval at the October meeting. The current Microcomputer Data Integrity committee is made up of John Todd, Steve Miller, Chuck Fuller and Jim Curry, Chair.

October 15, 1991 Meeting

Chairman Vondran announced that the IRC Planning Retreat will be held at the Sheraton Hotel on November 19, 1991, from 10:00 a.m.-4:00 p.m. Lunch will be provided as well as beverages and snacks throughout the day. Vondran noted that the IRC will be preparing its own brief strategic plan to present to the Provost. Henry Hayes, the facilitator for the Planning Retreat, was introduced to the Council, and gave a brief overview of how the retreat will be conducted.

Richard Harris requested that the IRC Chair appoint a Computer Resources Security Committee in accordance with the Computer Resources Security Policy that was approved at the last meeting.

It was acknowledged that some concerns about the Security Policy, as well as its implementation, had been expressed by members of the Faculty Senate.

Chairman Vondran appointed John Todd as Chair of the Computer Resources Security Committee, and Don Grose, Jean Schaake, Carolyn Cunningham, and Frank Forney as members. Vondran stated that any concerns regarding the Security policy should be presented to this committee.

Jim Curry presented for approval the Microcomputer Data Integrity Policy, which had been distributed at the last IRC meeting, and asked for comments from Council members. Following a discussion in which several changes were suggested, the report was approved and will be submitted to the Deans' Council and the Information Resources Steering Committee.

Curry pointed out that the Microcomputer Maintenance Shop's responsibility for equipment on campus will not be lessened by this policy, and in fact he is offering to install virus protection software on every computer he services, at no charge.

Chairman Vondran stated that when the Computer Resources Security Committee addresses the issue of implementation of its policy, it should take Curry's offer into consideration.

Discussion followed, during which it was agreed that the Microcomputer Maintenance Shop should work with the guardians of any equipment on campus when installing the anti-virus software. It was noted that a copy of the Data Integrity Policy will be distributed with each new computer sold by the Microcomputer Maintenance Shop, and that it should be the role of the Computer Resources Security Coordinator to educate the university community regarding the issues of data integrity and computer resources security.

Bill Buntain distributed a draft of the High Speed Communications Backbone Upgrade Report and explained what has been done so far as well as what is being looked into for the future. He stated that it may not be economically feasible to go with fiber optic wiring everywhere on campus. Buntain will present a final report for approval at the next IRC meeting.

Philip Baczewski presented the Unix Advisory Committee Report. A brief discussion followed during which a question was raised regarding the source of funding for UNIX software and hardware. Baczewski reported that funding would come from the Computing Center's Prop II budget. Also, it was suggested that a formal needs assessment be conducted each year to determine the university's software and hardware needs.

Richard Harris reported that since the Prop II budget is an integral part of preparation to file a Final Operating Plan to DIR, it was important that the IRC review and comment on the proposed budget he and his staff had prepared. After a brief review of the proposed major expenditures and there being no objections, it was agreed that the budget would go into the Final Operating Plan, as presented. Paul Dworak noted that before future procurements are planned, there needs to be an effort made at interdepartmental communication to insure that the newest and best technologies are obtained.

Cengiz Capan announced that GALPAC will begin meeting regularly next week; GALMAC will also meet regularly and report to GALPAC.

In the future, GALPAC will be the committee that reports to the IRC. ■

United Nations Records in RLIN Database

The Research Libraries Group has announced the acquisition of more than 312,000 bibliographic records from the United Nations' Dag Hammarskjold Library. The bibliographic records, dating back to 1979, include citations to documents and proceedings of the General Assembly, Security Council, International Court of Justice, UN Secretariat, and other UN bodies and to the many other international documents and publications received and held by the Dag Hammarskjold Library.

For more information about the UN records and the RLIN database, contact the RLIN Information Center, Research Libraries Group (BL.RIC@RLG.STANFORD.EDU) ■

Calls For Papers, Conferences, And Other Items of Interest

We have received the following "calls" and announcements from various organizations.

Call for Papers

- ❑ *Computational Intelligence Journal* — **Special Issue: Computational Approaches to Non-literal language.** Papers are invited on topics including (but not limited to) the computer recognition, interpretation, acquisition, generation, and robust parsing of non- literal language. Non-literal language includes metaphor, idiom, irony, simile, sarcasm, and other devices whose meaning cannot be obtained by direct composition of their constituent words. Submission deadline is **February 6, 1992.** Contact James Martin (martin@boulder.colorado.edu), Computer Science Department and Institute of Cognitive Science, University of Colorado at Boulder, Box 430, Boulder, CO 80309-0430 Phone: 303-492-3552.
- ❑ **Artificial Life III, June 15-19, 1992, Santa Fe, New Mexico.** Artificial Life complements the traditional Biological Sciences, concerned with the analysis of living organisms, by attempting to synthesize behaviors normally associated with natural living systems within computers and other "artificial media." Authors should send an abstract (5 pages at most) by **January 15, 1992.** Contact: AlifeIII Program Committee, Santa Fe Institute, 1660 Old Pecos Trail, Santa Fe, NM 87501 (alife@sfi.santafe.edu).
- ❑ **Literature, Computers and Writing: Forging Connections in the High School and College English Classrooms, April 3, 1992, New York Institute of Technology, Old Westbury, New York 11568.** The conference has two primary themes: (1) how computers and specifically computer networks can be used to ally high school and college teachers of English, and (2) how computers are changing the way literature is created, taught, understood and written about. Submission deadline is **January 15, 1992.** Contact Ann McLaughlin, New York Institute of Technology, Department of English 516-686- 7557.
- ❑ **Ninth National Symposium on Computers in Medical Education, April 4-5, 1992, Omaha, Nebraska.** Papers and computer demonstrations are welcome in all categories of health care education. Abstract deadline is **January 6, 1992.** Contact Robert S. Wigton, M.D. (Wigton@UNMCVM), Dept. of Internal Medicine, University of Nebraska Medical Center, 600 S. 42nd Street, Omaha, NE 6818 Phone: 402-559- 4285.
- ❑ **Computing Strategies Across the Curriculum, April 3-4, 1992, University of Vermont.** Proposals should be submitted by **December 10, 1991.** Contact the CSAC Program Committee (csac@uvmvm) Phone: 802-565-3316 for more information.
- ❑ **Eighth annual SAS Graphics Competition and Exhibit.** To be held at SUGI 17 (see below). Entry deadline is **March 16, 1992.** Contact Mic Lajiness, The Upjohn Company, 7000 Portage Road, Kalamazoo, MI 49001 Phone: 616-358-7494.

Conference

- ❑ **SUGI 17, April 12-15, 1992, Honolulu, Hawaii.** "World's largest gathering of SAS software users." Registration information: SUGI 17 Registration, SAS Institute Inc. SAS Campus Drive, Cary, NC 27513. ■

GimmeFest '91
- or -
How to Attend Networld Dallas

By Eric Lipscomb, ACS General Access Lab Manager (BITNET: LIPS@UNTVAX)

Anyone who works with any flavor of microcomputer based networking has heard of Networld. The Gala of Galas, the Exhibit of Exhibits, the end-all and be-all of networking tradeshows, the acme, the zenith... well, you get the idea. Networld '91 Dallas ran from October 15-17 at the Dallas Convention Center this year, and I was able to attend the last two days of the show. When I attended last year's show, I was only able to go for one day, which simply was not enough time to go through and visit all the exhibitors' booths. This year, I was prepared. I had the proper mindset, I had the proper equipment, and I had the energy necessary to achieve the ultimate tradeshow goal: to collect all the "gimmes" possible.

Now, grant you, Networld is a wonderful place to collect information about current and new products from various vendors. You can see demonstrations for all types of hardware and software in a working network environment. You can get product information on glossies or from talking to vendor representatives. But really, this is nothing that cannot be accomplished by making a few phone calls and sending or receiving a few faxes from your own comfortable office chair. Let's face it. At tradeshows like this, you're going to spend very little time sitting during the six to eight hours you're there. Sure, it's really convenient to have all these vendors right at your fingertips, ready to answer any questions you may have, ready to show you anything you want to see (within reason). But I'm personally not into marathon standing/walking. These vendors will generally go out of their way to bring their product to my office for a demonstration if they think I'm seriously considering purchasing from them. So why go through all the pain and discomfort when you can sit at your very own desk and have vendors wait on you hand and foot there?

Simple: "gimmes." Those little inexpensive tradeshow gimmicks that vendors go out of their way to make as unique and memorable as possible help to keep the name of the vendor in your mind and on your wall or desk at the office. Their ultimate goal? Advertising.My ultimate goal? Junk collecting.

In past years, I've come up with some moderately interesting stuff: a pair of red Novell sunglasses (which I still wear occasionally), some writing utensils imprinted liberally with vendor names, and a vast collection of buttons. This year I was out for blood. I was bound and determined to get my hands on everything I could while there. I was quite successful in my quest. But I got a whole lot more than just "gimmes." I also got some useful inside information on several products that I use or support in my job and some humorous stories surrounding the acquisition of some of my prizes.

Day One

I arrived at the Convention Center half an hour before the exhibits opened to pick up my name badge, a collector's item in and of itself, and the most important item of the whole journey: the collection bag. This year's selection was a plastic carrying bag sporting the names and logos of Apple Computer and IBM, along with the Networld emblem. Then at 10:00, the exhibits opened and in we rushed. The first of three areas where the vendors were set up was pretty uneventful. Oh, there were a few interesting exhibits, but only from a productivity point of view. The best action, apparently, was to be had upstairs in the main exhibit room.

The first of the interesting booths was the CE Software booth which was demonstrating QuickMail 2.5. Not only was I interested in the product, but found that if I sat through their demonstration, I'd get a nice-looking blue QuickMail mug. Great! My first acquisition. So I listened to two young women do a poor job of reading from a poorly written script for about fifteen minutes. Not only did I get the mug, but also a button that, if I wore it around the exhibit hall the rest of the show, could win me $50.00. I'm still wearing that button (and no, I didn't win anything).

Our next stop was at the Artisoft booth for a demonstration of LANtastic and its related networking products. The button I got here proudly reads "All Aboard Central Station™ Data multiport by Artisoft" and has some railroad-related images on it. I got this after sitting through a demo where, about every two minutes, the entire audience got to yell "Artisoft shatters the myth!" Well, that sure got my blood pumping.

The next item up for grabs was found at the Intel booth. They were giving away a poster which had cartoon depictions of 30 LAN nightmares. I'm now waiting to get the poster mounted and hung on the wall in my office next to my "This is your Brain. This is your Brain on Drugs. This is your Brain with a Side Order of Bacon." poster. They should complement each other very nicely.

Hunting activity was slow for a little while as we passed by several booths with not a whole lot to offer. We decided next to check the ShowNet server to see if anyone had left electronic mail for us at the show. Our mailboxes were empty, but we did have to fill out a questionnaire before we could check the mail, and at the end of the survey, the computer told us where to go to see if we had won a free T-shirt. Fortunately, we were right next to the location where the shirts were being given

out. I say fortunately, because I would have been very disappointed if I had walked across the entire length of the showroom floor to find that they had run out of shirts only minutes before. And I really wanted one, too. The Novell booth was sponsoring another T-shirt giveaway, but it was a little more complex. To win this T-shirt, I had to take a little "Solution Hunt" card to various booths at the exhibit to get stickers placed on the card. When I got all the stickers, I could have gone back to the very same location I had previously been to pick up the other T-shirt and find that the shirts were one and the same, and that they were still out. I'm glad I discovered this before getting even a single sticker. I did get a little red button from the Novell booth, though, so all was not lost.

The most interesting demonstration we attended the first day was at the Hewlett-Packard booth. They had a well-designed multi-media presentation showing their complete "networking solution." Even though we didn't win a copy of their promotional program "New Wave" (and we got really close, too), we did get one of those collapsible sun-snow screens for the windshields of our cars. I've needed one for a long time, so the trip to Networld saved me a trip to the gadget store to buy one. This wasn't one of those fold-up cardboard visors, either. It's one of the dual-ring, fully collapsible, imprinted with the HP logo, kind. Now I can save my dashboard **and** promote HP at the same time.

The rest of the day was pretty uneventful. We did head back downstairs to eat the catered food purchased at inflated prices (isn't that the way it always is?) a little after 1:00. We registered for a chance to win a round-trip ticket on the supersonic jet for a week's stay in London, got a lock combination number to try on several locked cans around the exhibit to win cash prizes (I got a great little screwdriver from the same booth, too), sat through a couple of other demonstrations for a chance to win goodies, but came up empty-handed on all counts. But I still had another day coming.

Day Two

My main goal for the second day was to get something I had seen the previous day, but didn't have a chance to pick up: a baseball cap from WordPerfect. Last year, I had picked up a cap from DaVinci E-Mail systems, and I really liked it. So I was bound and determined to get a WP hat this year. The first day I had passed the WP booth a number of times, either getting there a little after the show started (a 30 minute show starting every 45 minutes) or right before it started but after all the seats had filled. I even waited around the demonstration once for quite a while to see if I could pick up on the ending clues, but decided against it. My strategy this morning was straightforward. At 10:00 when the exhibits opened, I went straight for the WordPerfect booth and sat in a chair until the first show started at 10:30. And I got my hat.

As it turned out, there were two other vendors also giving out hats. My receding hairline loved this news. I next tackled the Cabletron booth where they had a demonstration of network routing and how their repeater modules could avoid a train collision on the model railroad tracks that were running above the seating area. Their gimme was a railroad conductor's cap reading "Get on the fast track with Cabletron Systems." I also registered to win a model train set identical to the one they had running at the booth. (As of this writing, I haven't heard that I won the set. I figure that if I haven't heard from them in another three months or so, I'll give up on it.)

The other cap giveaway was at the Shiva booth, but the most interesting story at the Shiva booth didn't occur **at** the Shiva booth but one next to it. This booth was displaying Notework, a novell Netware E-Mail system. The most impressive thing that stuck in my mind about the presentation itself was that when an E-Mail message was sent, a little graphical airplane flew across your screen to indicate that the message was being delivered. I don't think words can express how unimpressed I was with the program in general. My inclination towards the program suffered further when I began asking one of the booth workers about the product and she began asking me about UNT. She was more interested in hearing about my musical studies here than telling me about the program. As if that wasn't bad enough, when I passed the booth again about 30 minutes later and stopped by to make small talk with her again in hopes of getting her phone number, she looked right at me, smiled, and asked if I would like to know more about their product. I shook my head and walked on past.

Shiva was giving away their recently released Netmodem/E network dial-in product in their 15 minute demonstration that was nominated as PC Week's "Worst of Show" honorary award. I sat down about ten minutes before the demonstration started and got to listen to a sales rep inform me how much longer before the show started and how I should really try to ignore the music that Shiva had playing in the background. It was really **bad**, whether Shiva intended or not. Over music that sounded vaguely like Depeche Mode, a female vocalist was singing to us "Shiva. Win a NetModem here. Now recruiting Novell VARs." The phrase "Depeche Modem" immediately came to mind. At any rate, the sales rep then pointed out that the Shiva booth had been nominated "Worst of Show" by PC Week, and that vendors in the neighboring booths had requested numerous times that the song be shut off violently. The real highlight of the Shiva show, though, was the bright neon orange caps that they gave out. Everybody in the audience had to wear their cap to be eligible to win the modem at the end of the demo and looked like, as PC Week put it, "rows of radioactive gumdrops." I didn't win the modem, but I will proudly wear the cap.

My last acquisition was a really amusing button from Network General ad-

vertising their Distributed Sniffer System. The button has a "bug" with many arms and heads stretching itself around a globe. Humorous, but it gets the point across.

All in all, Networld '91 was a huge success for me and my collection. In addition to all the buttons, caps, and other gimmes, I managed to bring home over 20 pounds of glossies on various and sundry products that could be beneficial in my network environment. I'm eagerly awaiting the arrival of Networld '92 in Dallas, where I'll make sure to track down the T-shirts first thing. But a year is an awfully long time to wait, so maybe I'll preview Networld '92 in Frankfurt in April to stay my appetite. ■

A First Look at DOS 5.0, Part II: The Quest for 640K

By Eric Lipscomb, ACS General Access Lab Manager (BITNET: LIPS@UNTVAX)

As I mentioned in the last issue of *Benchmarks*, this article will look into the memory management aspects of DOS 5.0. Users of PC-class computers can take advantage of DOS 5.0's ability to use memory outside of the 640K region as QEMM and 386Max have been doing for quite a while. While Microsoft is not breaking any new ground with its memory management features, they are finally aiming for something other memory managers could not provide: a better chance for compatibility with the operating system.

Memories, Memories

Before we see how DOS 5 memory management works, we need to look backwards and see the historical need for these management techniques. The first PCs put into production had an amazing 64K of memory available on the machine. The operating system accessed these memory locations using memory address values that were specified with the design of the PC hardware. Memory, however, is not the only hardware accessed by the CPU using the memory address. Video adapters also needed addresses so the CPU could put information into the video memory for display on the phosphor green screen (this is still the history lesson, remember?). IBM arbitrarily placed the monochrome video adapter at memory address B000:0, leaving 704K of memory address space available to fill with RAM. In those days, memory was expensive, and not necessarily needed, so there didn't appear to be any problems with this assignment of the video adapter.

Soon, though, users decided they were tired of staring at a green screen, so the amber monitor was developed. Then these users realized that it wasn't the **green** they objected to as much as the **monochrome**, so a color monitor soon came out. The significance of this was that the color video adapter had a starting memory address of B800:0, 32K higher than the monochrome adapter, but IBM reserved the memory block from A000:0-B000:0 for video graphics, leaving color PCs with 640K of memory address space available for RAM. Again, at this point, the issue was not critical enough to raise any eyebrows.

Eventually, someone realized that DOS as written by Microsoft required all its available RAM to have a contiguous memory space. (Actually, this was known all along, but, as is common with PC expansions, no one expected the rapid changes that resulted in lower memory prices and programs that used larger amounts of memory.) In other words, the operating system could use RAM in the address range of 0000:0-A000:0, but if any RAM existed in areas higher than, say, C000:0, DOS would not be able to use it. Thus, the 640K barrier became a real issue.

In today's market, memory is much cheaper, and we have software programs that are incredible memory hogs, needing every byte of DOS memory they can grab. Video adapter addresses have not changed, so the 640K barrier is still in place. The advent of networks and other specialized applications have resulted in software that remains "in memory" while other applications are running. All of this means that the 640K of RAM available to DOS applications has become very valuable property.

Extended memory is now available on 286 and higher class PCs (expanded memory can be used on all classes of PC computers with Expanded Memory boards) and provides upwards of 32M of RAM to the computer, but this memory, because of the contiguous limitations of DOS, is not available for programs to run in. Third party vendors have devised ways to use this extra memory for temporary storage space while applications are running. Developments in the last couple of years have even resulted in ways of loading memory resident software up into this extra memory space. This was accomplished using undocumented features of the operating system, and often times didn't work as expected.

Meanwhile, the lower 640K becomes more and more valuable, and people are constantly searching for ways to remove applications from the lower 640K region to free up space for the larger applications.

DOS Tackles Memory Issues

With DOS 3, Microsoft introduced HIMEM.SYS,which allowed memory resident applications to use the "high memory area" (or HMA) as a result of a "quirk" in Intel's design of the CPU. Very few applications used this mem-

ory area, however, including DOS. Microsoft Windows 3.0 was the first major application to make full use of the HMA and extended/expanded memory areas.

DOS 5 begins to tackle this issue, and does so with quite a show. With the new HIMEM.SYS driver, DOS itself is able to use the HMA. If your computer has extended memory, you can take advantage of this feature by placing the following lines in your CONFIG.SYS file:

```
device=c:\dos\himem.sys
dos=high
```

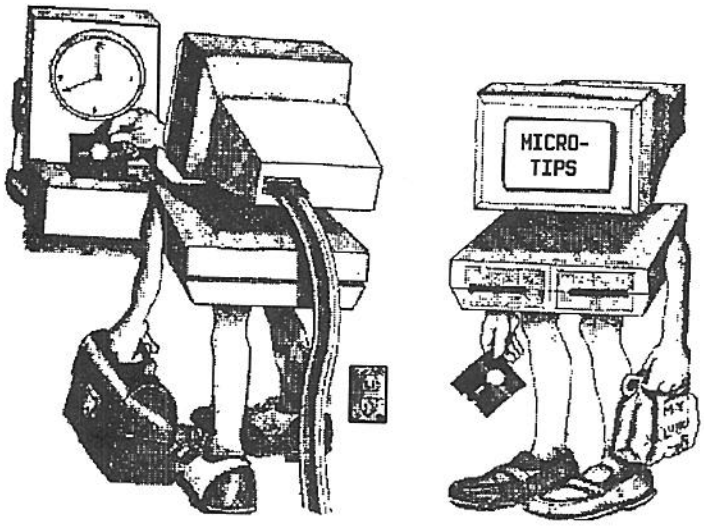
This loads the resident portion of DOS into the HMA, freeing up almost 30K of the lower 640K.

Next issue, we'll see other ways DOS 5 uses memory outside of the lower 640K to free up more memory for DOS applications. ■

Virus Update

Compiled by Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

A new, fast moving, and very destructive virus has been reported from multiple countries in Eastern Europe. The virus uses a completely new technique for infecting and replicating and it cannot be easily identified or removed with existing anti-virus removers. The virus has been named **DIR-2** and it spreads more rapidly than any virus yet discovered (according to John McAfee of McAfee Associates, makers of ViruScan/CleanUP/Vshield). Most anti-virus suppliers are re-writing their programs to deal with this virus. Make sure and get the latest version of your anti-virus program(s) of choice for maximum protection. ■



This column is intended to serve as a forum for sharing useful tips on making more productive use of microcomputers. If you have a tip that you feel may be of use to campus users, submit it to the ***Benchmarks*** *Editor for possible inclusion in a future issue.*

Resetting Your Computer's Clock

This is an "encore" version of a Micro-Tip that appeared in the November/December 1990 issue of ***Benchmarks****. It is modified from an article, "Standard Time is Returning — Don't Forget to Set Back Your Computer's Clock" that appeared in the October 1990 issue of the* ***Berkley Computing Bulletin*** *(Volume 3, Number 10).*

Daylight savings time came to an end at 2:00 a.m. on Sunday, October 28. Chances are, you didn't think about resetting your computer's time. If so, you might want to consider resetting it now. If your computer doesn't have the correct time, the time stamps on all the files you create or modify will be wrong.

Resetting Your PC's Clock

If you have an original IBM PC or PC XT that has a clock board installed in it, you should follow the directions supplied with the software that came with the clock board.

If you have an IBM PC AT and you are running PC-DOS 3.2 or earlier, you will need to run the "Setup" program to reset the clock. The "Setup" program is on the "Diagnostics" disk that was supplied with the *Guide to Operations* manual. If you are using PC-DOS 3.3, use the TIME command to reset the clock.

If you have an IBM PS/2, the software for resetting the clock is on the "Reference Diskette" supplied with the *Quick Reference* manual. Consult your manual for details on how to run this software.

Resetting Your Macintosh's Clock

To reset your Macintosh's clock, select "Alarm Clock" from the Apple menu. Then click on the flag next to the time displayed on the right side of the window. Next select the clock in the lower left portion of the window. Now select the numbers in the hours place in the time. You can either type in the correct hour or you can click once on the downward-pointing arrow to the right of the time. Once the correct time is displayed, click on the flag again and close the window. ■

VAXCLUSTER USAGE STATISTICS

September Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. GAUSSIAN	Molecular Modelling	5 11:42:08.90	31.4
2. DISKEEPER	Disk Optimizer	3 11:18:57.82	19.8
3. User programs	Compiled Programs	3 06:17:56.38	18.7
4. NEWS	ANU News Utility	1 18:40:26.85	10.2
5. BACKUP	Disk Backups	0 08:33:40.05	2.0
6. MAIL_SERVER	VMS Mail Server	0 08:00:26:81	1.9
7. LOGINOUT	User Login	0 07:51:10.64	1.9
8. MAIL	VMS Mail	0 07:48:55.62	1.9
9. LISP	Lisp Interpreter	0 06:05:53.20	1.5
10. TPU	TPU Editor	0 04:28:44.87	1.1
Total		17 11:47:45.78	

September Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	1228137	25.0
2. SET	VMS Utility	101874	19.9
3. DIRECTORY	VMS Utility	43250	8.5
4. DELETE	VMS Utility	40762	8.0
5. User programs	Compiled Programs	27915	5.5
6. SYSLOGIN	User Login	18307	3.6
7. MAIL	VMS Mail Utility	15018	2.9
8. MAIL_SERVER	VMS Mail Server	14588	2.9
9. SEND	BITNET message Utility	11479	2.2
10. TYPE	VMS Utility	10653	2.1
Total		511539	

October Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. User programs	Compiled Programs	4 08:42:24.94	32.3
2. GAUSSIAN	Molecular Modelling	2 14:20:06.73	19.2
3. NEWS	ANU News Utility	1 22:25:52.06	14.3
4. XYZZY	Chat Utility	0 10:21:18.64	3.2
5. LOGINOUT	User Login	0 09:45:08.64	3.0
6. MAIL_SERVER	VMS Mail Server	0 08:44:09.30	2.7
7. BACKUP	Disk Backups	0 08:09:33.93	2.5
8. MAIL	VMS Mail	0 08:06:47.09	2.5
9. KERMIT	Kermit Transfer Utility	0 06:37:56.84	2.0
10. IRC	Internet Relay Chat	0 05:32:09.59	1.7
Total		13 11:54:52.92	

The Best of the BBS

Edited by Ken Corey, VAX Programmer/ Operator (BITNET: KENC @UNTVAX)

*Welcome to the **Best of the BBS** column. This column highlights some of the more interesting and useful discussions on the UNT BBS. For those of you not familiar with the BBS, here is how to log into the UNT BBS.*

- *Sign-on by typing CALL DEC at the LAN prompt and then entering BBS as your Username at the VAX prompt.*
- *If you are already logged-on to the VAXcluster, type BBS at the $ prompt.*

*The opinions expressed in this column do not necessarily reflect the views of Academic Computing Services or the Computing Center. Also, information in **Best of the BBS** has not been checked for accuracy.*

FILELIBRARY

#3160 18-SEP-1991 13:56:03.23
Subject : **New McAfee Releas**
I've just uploaded SCANV82.ZIP, CLEAN82.ZIP, and VSHLD82.ZIP from McAfee and Associates. This is the latest release of the McAfee anti-virus package. I've unzipped and scanned the files in these ZIPs, and they check out clean. Use at your own risk.

.....

#3161 19-SEP-1991 13:24:00.82
Subject : **Latest MS-Kermit Version**
MS-Kermit 3.11 has been uploaded and is in the IBM.COMM area. This new version features TCP/IP support allowing you to do Kermit uploads and downloads over the Internet from a PC connected to Ethernet.

October Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	164050	27.1
2. SET	VMS Utility	116493	19.2
3. DELETE	VMS Utility	48815	8.1
4. DIRECTORY	VMS Utility	45118	7.4
5. User programs	Compiled Programs	38394	6.3
6. SEND	BITNET message Utility	20487	3.4
7. SYSLOGIN	User Login	19552	3.2
8. MAIL_SERVER	VMS Mail Server	18201	3.0
9. MAIL	VMS Mail Utility	15415	2.5
10. TYPE	VMS Utility	10174	1.7

IBMPC

#3162 19-SEP-1991 21:54:04.71
Subject : **new uploads**
I uploaded two new files this evening in the ibm.utility file area.
lha213.exe is the newest, fastest, best compressing version of lharc. This dearchives files with the .lzh extension. Lha is free software unlike pkzip and arc which are shareware.
pklte112.exe is pklite. pklite compresses most executable programs and they remain executable. Good to get more space on your hard disk. This may make your programs load a little more slowly.

.....

#3164 21-SEP-1991 22:23:53.64
Subject : **swapping utilities**
I tested out kermit 3.11 over tcp/ip by uploading two files that I find useful.
Swell100.arc is a TSR that swaps the memory contents to disk when you shell out of a program and loads back the program back into memory when you exit from the shell. This way you have almost all of your memory free when you shell out of a program. Shareware. The 'evaluation' version is slightly braindamaged. It intentionally eats up an extra 40K and it makes you wait 3 seconds every time it loads a program. The version the author sends you when you register does not have these features.
Shrom17b.zip does the same thing as above except it is a program loader instead of a TSR. You use it by entering shroom <program name> <arg1> etc. This program is not 'crippled' like swell is.
I ftp'ed several other programs like these, but these seem to be the only ones that I tried that work dependably.

PROGRAMMING

3054 1-SEP-1991 14:49:21.21
Subject : **Joke!**
Hey guys!
I heard this joke that I wanted to pass on:
Why do computer programmers get Halloween & Christmas mixed up?
because DEC 25 == OCT 31.
Sorry if this is a really old joke (I just heard it) ■

VAX/UNIX NEWS

VAX News

- **Phone directory installed** — A personal phone directory program has been installed on the vax. To use it, type **PN** at your prompt and follow the instructions from there. To look up a phone number without going through the menu system, just type **PN *string*** from your dollar prompt. Any questions regarding the program should be directed to LEAH on the VAX.
- **Removal of software packages being considered** — The Academic Computing Services is considering removing Datatrieve, Common Data Dictionary, and the COBOL compiler from the VAX due to lack of use. This would be performed over the Christmas break. The major benefits would be reduced software maintenance cost, less staff time for software maintenance, and it would free up well over 20 MBs of disk space. If you need one of these software packages, please send mail to BILLY on the VAX and tell which products and the reason for your need.
- **unzip installed** — A portable version of *unzip*, which is compatible with MS-DOS' PKUNZIP archiving software, has been installed. Type **HELP UNZIP** for more information.
- **zip installed** — A portable version of *zip*, which is compatible with MS-DOS' PKUNZIP archiving software, has been installed. Type **HELP ZIP** for more information.
- **zipsplit and zipnote installed** — zipsplit is used to split a large zip archive into smaller files. Zipnote is used to add comments to any zip archive. No help files are available for zipnote or zipsplit, but you car

give either program a -h flag, and it'll print out usage information.

- **ship installed** — ship is intended as a workalike to uu{enlde}code, but works more efficiently. 'ship -h' will give you information on how to use ship.
- **Archie client** — Archie is a database of a large number of anonymous FTP sites and what files are available at them. Previously, archie was only accessible by TELNET. We now have a client program on the VAX called *archie*. Type **HELP ARCHIE** for more information.
- **HYTELNET Utility** — HYTELNET is a Hypertext Database of TELNET (Internet) accessible sites including Library Catalogs (more are listed than in LIBTEL). To run HYTELNET, just type **HYTELNET**. The arrow keys are used to navigate and <q> is quit.
- **WIN/TCP 5.2 Installed** — The following user related changes to our TCP/IP software have been made:
  - WHOIS has been fixed and no longer requires the workaround.
  - TALK now works again.
  - The Keymappings of TN3270 are now TOTALLY different. Please see HELP TN3270 KEY for more information. <CTRL-Z> and then QUIT offers a more graceful way to exit TN3270.
  - FTP should handle Postscript files and other files containing nulls better than previously (i.e., not trash them under some circumstances).
  - FTP from CMS to VAX should no longer hang.
  - MGET and MPUT in FTP from Dos systems to VAX will now work correctly. Also, MGET and MPUT from UNIX will give have reasonable file names (no version numbers and lowercase).
  - Some of the include socket headers have been fixed to prevent compiler warnings.
  - The WHO command now shows where the person TELNETting in is coming from. We hope in the future to be able to translate the numeric IP address back to the name also.
  - Network Time Protocol (NTP) is now supported. The time on the VAX will be within fractions of a second of PSTI radio clock time (based on atomic clocks) and also the time on the Solbourne.
  - BOOTP is now supported to download configuration information for PCs running TCP/IP. The VAX will now be the backup instead of the CSCI department's Sequent.

  Those users who have their own symbols pointing at TCP/IP executables directly may have to change syntax on some of them. Usually it is to remove the first parameter, which used to be the same name as the executable. Please feel free to report any problems or ask any questions about this new version by sending mail to OPERATOR.

UNIX News

- **unzip installed** — A portable version of *unzip*, which is compatible with MS-DOS' PKUNZIP archiving software, has been installed. Type **man unzip** for more information.
- **zip installed** — A portable version of *zip*, which is compatible with MS-DOS' PKUNZIP archiving software, has been installed. Type **man zip** for more information.
- **zipsplit and zipnote installed** — zipsplit is used to split a large zip archive into smaller files. Zipnote is used to add comments to any zip archive. No man pages are available for zipnote or zipsplit, but you can give either program a -h flag, and it'll print out usage information.
- **ship installed** — ship is intended as a workalike to uu{enlde}code, but works more efficiently. **ship -h** will give you information on how to use ship.
- **HYTELNET installed** — HYTELNET is a Hypertext Database of TELNET (Internet) accessible sites including library catalogs (more than in LIBTEL). To run HYTELNET, just type **hytelnet**. The arrow keys are used for navigation and <q> for quit.
- New policy on cpu-intensive processes. The following types of programs are considered cpu-intensive:
  - All user compiled programs that run for more than 10 minutes of CPU time.
  - All Mathematica runs of any sort.
  - All SAS runs of any sort.

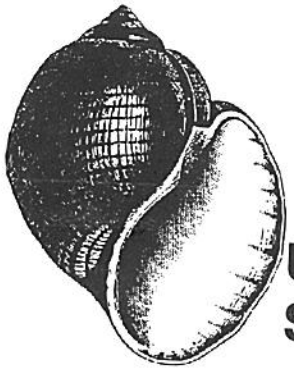
  All users are limited to 1 cpu-intensive (see above for definition) job at a time. The operators are authorized to stop or kill, at their discretion, any additional jobs. If you have a cpu-intensive job that is non-interactive (i.e. math -batchinput, commandlines ending in &, etc.) you _must_ 'nice' your job with a value of 10. Nicing your job forces it to more easily relinquish control of the cpu, which means that interactive users will still get reasonable response-time. Your job will take longer to run this way, but otherwise the other users will not get a fair slice of CPU time.
  NOTE: SAS and Mathematica interactive runs need not be niced, but they still fall under the 1 cpu-intensive process per user ruling. Exceptions to this policy must be obtained at least 24 hours in advance and are only available through the Computing Center office during regular office hours.
  To correctly nice a job, use one of the following commands:

  ```
  % nice +10 <job> &                    (csh)
  $ nohup /usr/bin/nice -10 <job> &     (sh)
  ```

  For example:

  ```
  % nice +10 math -batchinput -batchoutput
  <inputfile> & outputfile &
  ```

- **New Archie Server Being Used** — A new archie server came up which is less loaded and is closer to us on the network. We have switched our client to use this new server. It is much, much, much faster. ■



The UNIX Shell

By Marc St.-Gil, UNIX Systems Programmer (mstgil@sol.acs.unt.edu)

Hello! And welcome back to The UNIX Shell. In keeping with this month's *Benchmarks* theme, this month's column is a further discussion about using **nn**, Sol's news reading program.

Here are a few tips that will help you figure out what is happening when you first use **nn**. The key that you will use most is the space bar. The default action is always triggered by the space bar. Before you continue, may I suggest that you go to a terminal, log in, and enter **nn**. There is quite a bit of information in the paragraphs below and it will be much easier to assimilate if you can actually see the screens and try out some of the commands.

When you start **nn** for the very first time, it will display a welcome page with some useful information. When you are ready to move on, follow the directions highlighted at the bottom of the screen.

Any time new information regarding the use of **nn** needs to be brought to your attention **nn**'s "Message of the Day" screen will be presented. This should not be confused with the system's "message of the day" that is printed each time you log in. When you are ready to move on, follow the directions highlighted at the bottom of the screen. You will not see this screen again until it changes.

If you have used **nn** before, you will first be presented with the option of returning to the last newsgroup you were reading otherwise, the screen presented is the article selection menu for the first newsgroup. By default this will be the unt.networking newsgroup. To see the current presentation sequence of all the newsgroups to which you are subscribed and contain unread articles, press the <Y> key. This will present you with a two-column screen listing the newsgroups in presentation order. The newsgroup you are currently in will be marked by an asterisk between the number of unread articles and the name of the newsgroup. When you are on the article selection screen, you enter the character in the leftmost column of the screen on the line of the article you want to read to select it. On most terminals, these letters will start with **a** and range up to **s**. That news article will become highlighted to confirm your selection. Entering the character a second time will unselect the article. You may select all the articles with the <@> key. This will cause all currently selected articles to become unselected and all currently unselected articles to become selected. You may also select a range of articles by entering the character associated with the first article you wish to select, then pressing the <-> key, and finally the character associated with the last article you wish to select. For example, pressing the <d> key followed by the <-> key followed by the g key would select the articles marked d through g on the current screen. At the bottom of the menu is a status line which has an indicator, at the right, that tells you what percent of the list of news articles is still left for this newsgroup. "All" would indicate that all of the articles in the current group fit on one screen. "Top 55%" would indicate that you were on the first screen and that that screen represented 55% of all the available articles. "77%" would indicate that you were on neither the first nor the last screen in the group and that you had seen 77% of all the available articles. "Bot" would indicate that you were on the last page of the list. When you have selected all the news articles that you want to read on that screen of the menu, use the space bar to advance to the next screen. You may back up a screen by pressing the < (the less-than key). When you reach the last screen and have selected all the articles you want to read, press the space bar once again to begin reading the articles you selected.

The status line at the bottom of the screen is highlighted and displays several items that may be of use as you wend your way through all the newsgroups. The status line for the selection screen is different from the read-article screen. When you are in an article selection screen the first field is the time at which you entered the current newsgroup. The next field is an indicator for which screen you are in. If you are in an article selection screen it will read SELECT. If you are in a read-article screen it will reflect the current newsgroup. The next field is the word help followed by the command characters used to get help. In a read-article screen, there is an additional item between the current newsgroup and the help commands. This item displays how many articles that you have selected are still left to be read. You can always get context sensitive help screens by pressing the <?> key. You can get help on available "extended commands" by pressing the <:> key followed by the <?> key.

For those of you with '.signature' files, be warned that **nn** will not use any lines after the fourth line of your signature file. If your signature file contains more than four lines, you may be notified via E-mail that your posting failed. This is not actually correct. The post succeeded, but your signature file was truncated. Please do not re-post the message, simply edit your signature file to trim it down to the USENET approved size.

There are many other features available in **nn**. For more information on using the **nn** news reading package, use the command **man nn**. A handout on using **nn** will be available soon in the Computing Center (ISB 119). Be sure to check for it. ■

Mainframe Performance Statistics

Operating Systems Performance Statistics for September

CPU	SYSTEM	Planned Production Hours	Production Hours Achieved	System Uptime
ACAD	VM/XA	720.00	720.00	100%
ACAD	MUSIC/SP	701.80	701.80	100%
ACAD	MVS/JES2	720.00	718.70	99.8%
ACAD	COMPLETA	710.36	708.86	99.8%
ADMN	MVS/JES2	720.00	718.70	99.8%
ADMN	COMPLETA	270.00	269.63	99.9%
ADMN	ADABASA	683.77	681.65	99.7%

Operating Systems Performance Statistics for October

CPU	SYSTEM	Planned Production Hours	Production Hours Achieved	System Uptime
ACAD	VM/XA	741.27	728.40	98.3%
ACAD	MUSIC/SP	719.32	706.09	98.2%
ACAD	MVS/JES2	739.44	722.18	97.7%
ACAD	COMPLETA	730.26	712.63	97.6%
ADMN	MVS/JES2	743.23	742.60	99.9%
ADMN	COMPLETA	318.00	318.00	100%
ADMN	ADABASA	715.43	714.55	99.9%

- The ACAD CPU achieved 100% uptime in September and 99.8% uptime in October. The HDS/7360 DASD achieved 100% uptime in September & October. The HDS/7380 DASD achieved 100% uptime in September & October.
- The ADMN CPU achieved 100% uptime in September & October. The HDS/7360 DASD achieved 100% uptime in September & October. The HDS/7380 DASD achieved 100% uptime in September & October. The EMC Solid State Disk achieved 100% uptime in September & October. ■

Key Causes Of Lost Productivity In October: ADMN CPU

Miscellaneous

1. Restart of MVS/SP to set TOD clock. 0.93 HOURS
2. Undetermined causes for systems restarts. 0.88

TOTAL 1.81 HOURS■

Key Causes Of Lost Productivity In September: ACAD CPU

Miscellaneous

1. MVS/SP systems software development. 1.50 HOURS

Key Causes Of Lost Productivity In September: ADMN CPU

Miscellaneous

1. MVS/SP systems software development. 1.70 HOURS
2. ADABASA system failure. 0.42
3. COMPLETA system failure. 0.37

TOTAL 2.49 HOURS

Key Causes Of Lost Productivity In October: ACAD CPU

MPU, Tape, and Disk Subsystems (HDS)

1. Preventive maintenance on 8083 MPU & DASD. 2.51 HOURS
2. Replace faulty component in 8083 MPU storage. 1.37

TOTAL 3.88 HOURS

Miscellaneous

1. VM/XA systems software development. 9.95 HOURS
2. Undetermined causes for systems restarts. 3.16
3. Emergency shutdown of ACAD mainframe system due to failure of air conditioning during teleregistration sessions on ADMN system. 3.15
3. Restart VM/XA to set TOD clock to standard time. 2.17

TOTAL 18.43 HOURS

GRAND TOTAL 22.31 HOURS

ACADemic (HDS) Program Hit Parade

September Top Ten Programs : Frequency Of Runs

Program	Description	#of Runs	% of Total
1. IEWL	Linkage Editor	6677	21.0
2. PGM=*.DD	Compiled Program	6654	21.0
3. IGYCRCTL	VS COBOL2 Compiler	5225	16.5
4. IEBGENER	IBM Utility	2916	9.2
5. SASLPA	SAS Version 5.18	2416	7.6
6. IEBPTPCH	IBM List Utility	1681	5.3
7. FORTVS	VS FORTRAN	921	2.9
8. SPSS	SPSS Version 4.0	896	2.8
9. ADARUN	ADABAS Utility Module	616	1.9
10. IKJEFT01	Password Change	593	1.9

September Top Ten Programs: CPU Seconds Used

Program	Description	CPU Seconds	% of Total
1. SASLPA	SAS Version 5.18	59903	38.5
2. PGM=*.DD	Compiled Program	53389	34.3
3. SPSS	SPSS Version 4.0	11623	7.5
4. IGYCRCTL	VS COBOL2 Compiler	7077	4.6
5. COMPLET4	Academic COM-PLETE	5780	3.7
6. ADARUN	ADABAS Utility Module	3143	2.0
7. SAS370	SAS Version 6.06	2886	1.9
8. SS4001	Operations Automation	2542	1.6
9. IEWL	Linkage Editor	2213	1.4
10. ISTINM01	VTAM Utility	873	0.6

October Top Ten Programs : Frequency Of Runs

Program	Description	#of Runs	% of Total
1. IEWL	Linkage Editor	15388	20.7
2. PGM=*.DD	Compiled Program	14648	19.7
3. IEBGENER	IBM Utility	12767	17.2
4. IGYCRCTL	VS COBOL2 Compiler	12520	16.9
5. CSMA001	Sort Utility	3809	5.1
6. SPCHLCOB	COBOL 2 Report Writer	3571	4.8
7. SASLPA	SAS Version 5.18	2359	3.2
8. IEFBR14	IBM Null Utility	1451	2.0
9. FORTVS	VS FORTRAN	1142	1.5
10. SPSS	SPSS Version 4.0	992	1.3

October Top Ten Programs: CPU Seconds Used

Program	Description	CPU Seconds	% of Total
1. PGM=*.DD	Compiled Program	172309	56.8
2. SASLPA	SAS Version 5.18	51611	17.0
3. IGYCRCTL	VS COBOL2 Compiler	17655	5.8
4. SPCHLCOB	COBOL2 Report Writer	16551	5.5
5. SPSS	SPSS Version 4.0	13491	4.4
6. IEWL	Linkage Editor	6677	[illegible]
7. COMPLET4	Academic COM-PLETE	6644	[illegible]
8. ADARUN	ADABAS Utility Module	3167	1.0
9. SAS370	SAS Version 6.06	2885	1.0
10. IEBGENER	IBM Utility	1612	0.5

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